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ABSTRACT

This handbook and annotated bibliography presents discussions, ideas, and resources useful to adult basic education (ABE) program teachers and administrators in implementing educational microcomputing, and describes microcomputer software programs that have been used successfully in ABE. The first part of the book, the handbook, is organized in eight sections. Following an introduction which provides a rationale and organization for the handbook, the second section presents a general discussion of microcomputers in ABE. This is followed by two sections providing information on choosing the hardware and the software for ABE programs. In the next section, staff development for those who work with ABE students and microcomputers is discussed. The following section provides lists of microcomputer resources for ABE, including textbooks, audiovisual materials, curriculum aids, resource centers, and software reviews. The next section suggests sources of funding, while the final section notes the problem of keeping up with new technology. Appendixes to the handbook list staff development aids and provide a glossary. The second part of the book, the annotated software bibliography, contains information on more than 200 microcomputer software programs that have been used effectively with adult students. The bibliography contains three sections. A software curriculum guide lists programs by subject area. Each entry in the bibliography lists program name, publisher, date, materials, subject, instructional type, level of use, and a description. Publishers' names, addresses, and phone numbers are provided. The programs listed are for use with the Apple II family of microcomputers, but many are available for use with other microcomputers. (KC)

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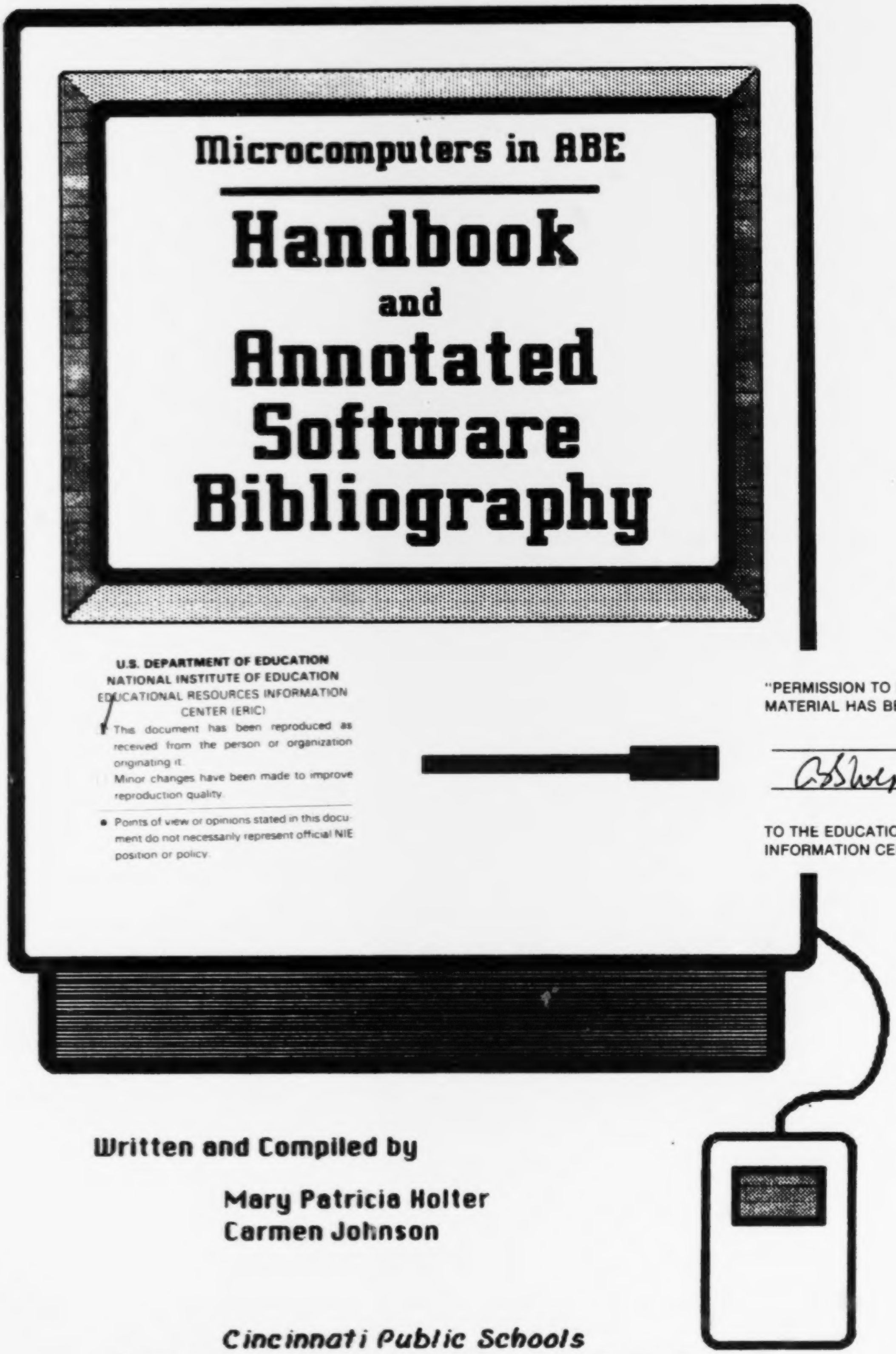

**Microcomputers in ABE**

# Handbook and Annotated Software Bibliography

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# Handbook

# Introduction

This **Handbook & Annotated Software Bibliography** is written for use by ABE teachers, administrators, and program planners. It is meant to be a guide to the effective incorporation of microcomputers into the ABE Instructional Program.

All hardware, software and other resources listed in this **Handbook** are included because of their suitability for use in Adult Basic Education. Inclusion is not based on personal preference of the authors, but is meant to present sources used effectively in ***one*** ABE program. There are numerous other resources available: hardware, software, printed materials, and audio-visuals. The concepts and materials discussed in this **Handbook** represent ***one*** approach.

Microcomputer components and compatible resources referenced in the **Handbook** are generally those of Apple Computer, Inc. There are many other good microcomputers on the market, however, and for those programs not dealing with Apple hardware the **Handbook** can be used as a directional resource. Much of the material referenced herein is universal in nature, and items specifically related to Apple products are often available for Commodore, Radio Shack, and other microcomputers.

## Organization

This book is divided into two parts: a **Handbook** and an **Annotated Software Bibliography**. Part One, the **Handbook** presents discussions, ideas, and resources useful to ABE Program teachers and administrators in implementing educational microcomputing. The **Annotated Software Bibliography** in Part Two describes micrcomputer software programs that have been used successfully in Adult Basic Education and provides publisher/ordering information.

## Use

This publication is meant for both teachers and administrators of Adult Basic Education programs. It should be used as a guide and framework around which to introduce educational microcomputing into the ABE Program. It is meant to give direction and suggest ideas, not to provide an answer to every educational microcomputing question.

This **Handbook and Annotated Bibliography** is, in itself, a testament to the use of microcomputers for ABE program management applications. The entire publication, including all graphic illustrations, was prepared on a Macintosh microcomputer and printed on an Imagewriter dot-matrix printer. The application programs used in the preparation of this publication were MacWrite, MacPaint, and Filevision.

# Microcomputers in ABE

Computers have become an integral part of our lives and the lives of our students. An understanding, or at least a level of comfort with them, is no longer a luxury. It has become a functional living skill.

Several years ago, when the Adult Practical Living Skills (APL) were first defined for ABE, there were five: Health, Occupational Knowledge, Consumer Economics, Community Resources, and Law & Government. In light of the recent explosion of computers into every aspect of our lives, it seems reasonable to define a sixth practical living skill: computer literacy. As such, it becomes the responsibility of the ABE Program to deal with computer literacy in the delivery of educational services to ABE students.

***The microcomputer is a practical and versatile machine.*** It has numerous uses and applications for all aspects of the ABE Program, making it a worthwhile investment in time and money.

## Instructional Uses of the Microcomputer

### *Computer-Assisted Instruction*

Microcomputers can be used for individualized instruction in all the ABE curricular areas: reading, mathematics, English, GED preparation, and APL skills (*including computer literacy*).

### *Computer Literacy*

Computer Literacy instruction involves many things:
- -an understanding of the operation of the microcomputer.
- -development of problem-solving and logical-thinking skills.

-the use of application programs: database management, word-processing, electronic spreadsheets, and so on.

### *Computer-Generated Instructional Materials*

ABE teachers may use the microcomputer to prepare customized learning materials for their students, including tests, puzzles, randomly-generated mathematics worksheets, vocabulary and spelling lessons, and numerous others. In this area, the teacher will be limited only by his/her imagination.

## Administrative Uses of the Microcomputer

### *Budget/Program Planning*

Administrators can keep budget funds and accounts organized with accounting and inventory packages. Program planning and projections can be made quickly and accurately through the use of electronic spreadsheet programs.

### *Record Keeping & Report Generation*

Both teachers and administrators can benefit from the database management capabilities of the microcomputer. Student and teacher records can be maintained and updated. Program impact and statistical reports can be quickly and accurately compiled and final copies generated using the same database programs.

### *Word-Processing*

The word-processing capabilities of the microcomputer can be used by ABE teachers and administrators in several ways:

-Preparation of memos, letters, reports, handbooks, etc.

-Development and printing of brochures, fact sheets, and other graphically-oriented materials.

-Development and use of easily updated mailing lists for program recruitment, special notices and other large mailings.

-Easy editing of long reports, pamphlets and publications

## Peripheral Benefits in Educational Microcomputing

### *For ABE Administrators and Teachers*

--> Less paperwork.

--> More efficient organization.

--> More compact records' storage and retrieval (*no more boxes stacked upon boxes in every available corner*).

--> Noticeable savings of time.

--> More impressive presentation of materials developed.

### *For ABE Students*

--> Enhanced self-image and feeling of confidence in dealing with computers.

--> Exposure to the career/personal possibilities of microcomputers.

## Defining Computer Literacy

Computer literacy means different things to different people, depending on their personal/professional perspective and their level of need. In this Handbook, we will be referring to ***basic*** computer literacy for ABE students, administrators, and teachers.

One concept needs to be dealt with from the outset. ***Basic computer literacy does not mean knowing how to program the microcomputer.*** There are hundreds of programs already written which cover the areas we will incorporate into our definition of computer literacy. A person need not learn to program the computer in order to become computer literate. Programmming may be taught to more advanced students, or at an elementary level to teach logical thinking, sequencing, and organizational skills - but ***it is not essential***.

Essentially, computer literacy means the ability to use the microcomputer effectively to meet one's own personal needs. For most people, that involves only enough understanding of the machine to be at ease in a computer society. For others, it means considerably more.

### *Basic Computer Literacy for ABE Students*

--> Understanding the terminology surrounding the microcomputer.

--> Being familiar with the various components of the microcomputer and how they interact: hardware and software.

--> Knowing the basic concepts of microcomputer operation: booting the system, dealing with utilities and so on.

--> Being aware of the various computer applications and how they might meet personal needs: word-processing, data-base management, electronic spreadsheeting, instructional computing, and so on.

### *Basic Computer Literacy for Administrators/Teachers*

--> All of those concepts suggested for students, with an understanding of management applications: word-processing, data base, accounting, and program planning.

--> Possibly some programming or authoring skills for developing student materials.

# Choosing The Hardware

Introducing microcomputers into the ABE instructional program involves a lot of decisions and commitments. None of these is more intimidatingly irrevocable than that of choosing the hardware.

## Things to Consider

### Program Needs

Computer-Assisted Instruction (CAI) is the most obvious need that can be served by using microcomputer technology in ABE. It would be a mistake, however, to overlook other program benefits, such as program management applications and teacher utilities. Purchase of hardware should take all three program needs into consideration, since the equipment purchased for one program need can usually perform double and triple duty with little or no modification.

### Student Profile/Curriculum

Different hardware requirements exist for different student populations. For example, vocational education students, specializing in such things as word processing or computer-assisted drafting, require different equipment configurations than would your standard ABE population.

This **Handbook** centers around the needs of the ***ABE*** student population. However, throughout the **Handbook** other ABE-related curriculum areas are included for consideration: APL, adult High School completion, GED preparation, and computer literacy.

## Financial Considerations

The purchase of microcomputer equipment represents a sizable financial commitment on the part of program administrators. Therefore, equipment should be purchased with much forethought and planning, based on certain criteria:

***Adaptability*** - equipment should be usable for more than one application: CAI, program management needs, and teacher utilities.

***Expandability*** - equipment configurations should be able to grow with program needs, so the equipment is not out of date a few years after its purchase.

***Software avaibability*** - a microcomputer is useless without good software. To be truly cost effective, equipment chosen for the ABE program should have a wide base of available software.

***Reliability*** - equipment should be chosen that has a proven record of reliability, as well as strong manufacturer support in the areas of equipment warranty, service, and repair.

***Uniformity and Compatability*** - all equipment chosen should be the same model, or at least compatable. This cuts down on operating expenses, since the same software can be used on all machines. Furthermore, when one piece of equipment is being repaired, the remaining components can be mixed and matched to keep as many computers operational as possible at all times.

These considerations are of major importance in making hardware choices. The hardware components which are chosen will likely be around for a long time. There can be little room for error, if the introduction of microcomputers into the ABE program is to be cost effective as well as instructionally sound.

Based on the above considerations, the discussions and recommendations throughout this **Handbook** revolve around the Apple II family of microcomputers. There are many good microcomputers on the market. Some are better than others in specific areas of concentration. For overall effectiveness in the ABE program setting, however, the Apple II line of microcomputers is quite able to meet student and program needs: CAI, program management, and teacher utilities. This is not to say that no other microcomputer could do likewise.

## Hardware Components: A Discussion

The first decision to be made is to determine the manufacturer and line of microcomputer equipment that is to be purchased. Following that, there are additional choices to be made within the category of each individual microcomputer component.

### Central Processing Unit - CPU

The CPU is the main part of the microcomputer. Within the CPU resides the microcomputer memory and the chips which process data. The size of the memory is given in terms of "K" (kilobytes), and is a factor to consider in purchasing equipment.

The Apple II family of computers currently sells two versions: the Apple IIe, a popular microcomputer in the educational market, and the Apple IIc, a portable microcomputer.

The Apple IIe is a 64K machine, which has seven expansion slots for adding peripheral devices, such as drives, printers, monitors and so on. There is a huge body of software available for use with the Apple IIe, making it extremely versatile and giving it a wide range of uses in the ABE program.

The 64K Apple IIe can be the building block around which you structure your entire microcomputer facility. It is wise to purchase an 80-column extended memory card for at least one Apple IIe, to convert it to a 128K machine and to give it an 80 column display. This makes it more versatile for program management applications, such as word-processing, database management, and electronic spreadsheeting. The configuration can still be used for student CAI and computer literacy, while offering the additional management capabilities to the staff.

The Apple IIc is a 128 K machine, which is billed as being portable. It is not entirely portable, however, since a detachable power supply must be carried wherever the machine goes. It is a very flexible machine, and will run most Apple IIe software. A few Apple IIc's in an installation represent a realistic way to diversify while remaining compatable with other equipment and software.

The Apple IIc does not have any expansion slots. Therefore, there are certain peripheral devices which cannot be added to this machine, making it a little less flexible than the Apple IIe. It does have other features that make it very attractive: a toggle 40-80 column switch which requires no additional purchase; a modulator for use with a regular TV monitor; 128 K of memory.

In summary, a well-rounded microcomputer lab might include one Apple IIe microcomputer with 128K extended memory, a few Apple IIc's, and the majority of the CPU's consisting of Apple IIe microcomputers.

## Disk Drives

Most educational software programs can be run on single drive microcomputers. It is not necessary to have two disk drives attached to each microcomputer in a facility.

There should, however, be some two-drive machines in a facility. The Apple IIe that is configured at 128K of memory should have two disk drives attached to it. Often, program management software requires a system with two drives. A few 64K machines should also have two drives to take care of any CAI software requiring such a configuration. Furthermore, having some extra disk drives in a facility will ensure that computers get maximum use. On those occasions when a drive is being repaired, extra drives can be moved around to keep all computers operational.

When planning for two-drive machines, the extra disk drives should be ordered for the Apple IIe machines The IIc and IIe cannot use the same disk drive and the bulk of the equipment will most likely be Apple IIe's.

The Apple IIc has an internal drive. Unless you are configuring it as a two-drive machine, there is no need to order disk drives separately for the Apple IIc. One disadvantage of the internal drive is that when the drive is inoperative, so is the entire microcomputer. You cannot, as with the Apple IIe, simply attach a different disk drive to make the computer operational.

## Monitors

The monitor, or screen, is a separate component for the Apple IIe and IIc microcomputers. There are three types of monitors:

***Color Monitors*** - Most educational software is presented more effectively on a color monitor. Often, the element of color is intrinsic to the operation of the program. Therefore, the majority of the microcomputer configurations in an ABE facility should have color monitors.

***Two-Tone Monitors*** - These are usually green-on-black for the Apple microcomputers. A facility needs only a few of these. One green-on-black monitor should be attached to the 128K Apple IIe that is to be used for program management applications. Word-processing programs, electronic spreadsheets, and database programs usually need 80-column displays, which are very poorly defined on a color monitor. A few other two-tone monitors in a facility might be useful for CAI software that is totally verbal in nature. Long verbal displays are much easier to read on a two-tone monitor.

***T.V. Monitors*** - A regular T.V. can be used as a microcomputer monitor. An RF (radio-frequency) modulator is needed to make the connection. This is the same type modulator used to attach video games to a television set.

There is some benefit to having at least one T.V. monitor in a microcomputer facility. The staff and students can take advantage of the numerous educational T.V. programs now being produced on the topic of computer literacy. Further, many of these computer literacy programs are available for taping on a VCR, and a library of materials can be built up for future use with staff and students.

## Printers

Any installation needs a few printers. There is no need to have one printer for each computer. A ratio of 1 printer for every 5 microcomputers is sufficient for an ABE microcomputer facility. One printer should be attached to the 128K Apple IIe that has been configured for program management applications. This set-up can be used by students during class and double as a business machine when students are not using it.

There are three types of printers:

***Daisy Wheel Printers*** - These are impact printers that make their letters like a regular typewriter. Each letter is printed separately, from a round or metal disk inside the machine. Daisy Wheel printers are often used for word-processing, as they give "letter quality" output.

***Dot-Matrix Printers*** - These printers form their letters one dot at a time. There are greater graphics capabilities using a dot-matrix printer, though the output is not as well-suited for word-processing. The newer dot-matrix printers, however, have a greatly improved quality of presentation, and often provide numerous different letter fonts at the push of a button. This **Handbook** has been prepared on a dot-matrix printer.

***Laser Printers*** - These printers represent a relatively new technology for microcomputer printing. As yet, laser printers are not financially or operationally practical for ABE microcomputer programs.

It is good to have enough printers in a facility to make hard copies (paper printouts) of tests, worksheets, and records for student and staff use. For program management applications, a printer is indispensable.

## Other Peripherals

There are other peripherals which can be added to the Apple IIe. Some, though not all, can be added to the IIc. The purchase of these peripherals should be determined by the needs of each specific program.

***80-Column Card*** - This card gives the microcomputer the ability to show either a 40 or 80 column display, based on need during any particular application. There should be one of these installed in any microcomputer that will be used for program management applications. The Apple IIc has a toggle switch controlling a built-in 40-80 column display option, so no additional purchase is needed.

***Extended Memory Card*** - This card contains extra memory chips and can turn a 64K machine into a 128K computer. There is an 80-Column Extended Card that combines the extra memory with the 80-column option. It is available for the Apple IIe. The extra memory allows the user to run programs that require more than 64K of memory.

***CP/M Module or Circuit Card*** - CP/M is a computer operating system, similar to DOS and ProDOS used by Apple. The Apple microcomputer cannot use any programs designed for the CP/M operating system without a separate card installed in one of the expansion slots. This is a circuit board that allows the user to run any of the thousands of CP/M programs on an Apple microcomputer.

***Modem*** - This is a telephone coupler that allows the user to link the microcomputer with another computer at a different physical location. Signals are sent over telephone lines and information can be sent and received as necessary. There are 300 and 1200 baud modems, based on the speed at which information is sent and received..

***Graphics Pads*** - These are input devices, whereby signals are sent to the computer via a tablet/pencil combination. These tablets are useful for graphics work, as well as many other applications.

***Game Paddles*** - These are not always used for games. Some software, particulary that related to perception activities, requires game paddles for precise movements. One set of game paddles per microcomputer facility should be enough in most cases.

## Other Microcomputer Center Needs

There are some other pointers that can make a microcomputer facility operate more efficiently:

***The value of dust covers cannot be overstated.*** Many equipment failure problems can be traced to dust, particularly chalk dust. The use of dust covers will not only cut down on repair costs and wear & tear on the equipment, but will also assure that the microcomputers are in operating condition most of the time.

***Covered disk cases should be purchased and used to store floppy disks.*** Here again, dust is the culprit. Valuable data can be lost and programs ruined where disks are left unprotected.

***Tables should be larger than the computer configuration, allowing room for students to put program manuals and/or worksheets.*** There is another benefit to larger tables. Small-sized computer desks have less stability and tend to be top-heavy. Computer components are easily knocked to the floor as students file in and out of the room. A six-foot table can nicely hold two microcomputers and peripherals, with good stability and student working space.

## Summary

The purchase of microcomputer equipment requires forethought and planning, taking into consideration program needs, student & staff needs, and financial implications. Many dealers offer package set-ups that may or may not meet the needs of an ABE microcomputer facility. It is important to determine equipment configuration by need rather than easiest availability. ***Do not count on a salesman to know what you need for your program.***

# Choosing The Software

There are equally as many things to consider in choosing the right software for a microcomputer installation as there are in choosing the hardware. The effectiveness of the microcomputer software used in an ABE program will ultimately determine the effectiveness of this technology as an instructional tool.

## Meeting ABE Program Needs

Effective software choices, made to meet ABE Program needs, should be based on two things: the software topic and the software type.

### Software Topic

The Adult Basic Education program deals with adults who have a variety of educational needs. Computer-assisted instruction, CAI, must include the curriculum areas of reading, mathematics, English, coping skills (APL), and computer literacy. Furthermore, these curriculum areas must be addressed on several skill levels: beginning, intermediate, and advanced. The broadest topic, therefore, for which software must be chosen is computer-assisted instruction.

A second topic, in many ways equally important, is that of program management and implementation. Teachers and program administrators can perform their jobs more effectively by taking advantage of microcomputer technology for program planning, managing, and implementation. This can be done with little or no additional cost to the program by making use of equipment and software already purchased for student use. Additional purchases of necessary application software can be used for both program management and for teaching concepts of computer literacy to students.

## Software Type

The topics to be included in making software choices, as we have seen, are computer-assisted instruction and program management. These topics can be addressed by several types of software. A well-rounded software library will contain a variety of presentation methods, or types of software.

Types of microcomputer software, relative to the ABE Program, include:

***Drill and Practice*** - This type of software does not teach, but provides practice in specific skill areas. Drills take many forms but all relate to the skill being addressed at the time. Drill & Practice software has a valuable place within the concept of computer-assisted instruction, but it is easy to place too much emphasis on this type of software. It does not take advantage of some of the more powerful aspects of the microcomputer: stimulating problem-solving and logical thinking skills.

***Tutorials*** - The tutorial teaches a concept, through discussion and interactive questions and answers. It is often presented with graphic representations of concepts, sound effects, and continual, personalized feedback to the student.

Tutorials are often followed by Drill & Practice sessions on the concept taught. This is a good combination of two types of software. If students have trouble on the practice material, a good software package will either refer them back to review the tutorial or re-present the material in a new tutorial on the same disk. This is a very sound educational approach.

***Simulations*** - A simulation presents a topic in a "what if . . " sort of framework. It often presents concepts which cannot, by reason of time or space, actually be presented in a normal classroom setting. For example, laboratory experiments which would normally take years to complete could be compressed into a single classroom session, by allowing the microcomputer to make projections based on compressed data.

ABE-suitable software makes use of simulations to teach problem-solving and logical thinking skills. Simulations are often interactive, forcing the student to take an active roll in decision-making and planning.

Simulations represent some of the best educational software on the market, addressing developmental student needs that have plagued teachers over the years: problem-solving strategies, logical thinking, organizational skills, and the ability to plan ahead.

***Games*** - Microcomputer software that presents educational concepts in a game format can be quite effective. ABE students are ready to deal with their educational needs and will confront subject matter directly and with great perseverance. However, games can provide drill in a way that maintains interest and can be a welcome, while productive, break from the monotony of certain subject areas.

There are some areas of educational need that can be better served by a game format than by any other. Perception skills, for example, often rely on physical, reflex action and can be practiced best in a game structure.

Do not overlook educational games in making software choices.

***Assessment*** - This is just what the name implies. Some software is written solely for the purpose of testing: basic academic skills, personal attitudes, student likes and dislikes, and so on.

Assessment programs are often combined with Tutorials or Drill & Practice software, to diagnose student needs before they begin work in a subject area. The results of these assesssments then form the basis for the student's educational work program.

***Application Programs*** - Application Programs are used to perform a specific task: word-processing, database management, accounting and record-keeping, report-generation, and so on. These programs are of inestimable value to ABE Program administrators and teachers and can also be used to teach computer literacy concepts to students.

***Utilities*** - Utility programs can be used by teachers to prepare student materials or to perform other tasks, making their job easier and more effective. There are software utility programs that generate word games and puzzles, create banners or posters, randomly generate mathematics worksheets with a limitless number of problems, prepare spelling lists and drills, and so on. Utilities can also help teachers use graphics, charts, and illustrations to dress up student handouts or worksheets.

## Evaluating Software

Not all educational software is suitable for use in the ABE Program. Evaluating software is an important part of setting up a microcomputer facility. There are several important questions to consider.

***Does the software meet program needs?*** The topic, whether CAI or program management applications, should be addressed by the software in question. There should be multiple skill levels to meet the instructional needs of as many students as possilbe.

***Is the program suitable for adult students?*** The material covered in the software program should be presented in a way that is not insulting to adult students. Pictures, displays, and wording should reflect the subject matter, without reverting to childish overtones when dealing with lower level students.

***Is the cost of the software program realistic and manageable?*** The cost consideration includes several factors. Does the package contain a back-up disk, in case something happens to the original? Is there any provision for copying the software for multiple use? What other materials are provided with the software package (manuals, worksheets, overlays, etc.)? Does the software effectively meet a CAI or program management need, so as to make its purchase worthwhile?

Beyond these external factors, there are internal program presentation concepts to consider in making software evaluations. A good piece of software should have certain characteristics that make it a sound, well-organized program.

***Good educational software should open with a Menu*** which lists the activities on the disk and gives the user a choice on where to begin. The user should be able to exit from any of the program activities at any time and return to the menu to make new choices. This is called being ***Menu-driven.*** Likewise, the student should have access to several program entry points, so it is not necessary to start the whole program over from the beginning, each time it is used.

***The sequence and presentation of program instructions should be controlled by the user.*** Directions should be clear, complete, and as short as possible.

***Presentation of the program content should be attractive,*** with a variety of color and graphics where needed to alleviate boredom and eyestrain. The material should be covered thoroughly and in a manner that stimulates thinking and reasoning on the student's part.

***Good software is interactive in nature, requiring response and thought from the user.*** A program should do more than just present facts. It should elicit a response from the user and provide continual feedback between program and user. Feedback should contain responses to both correct and incorrect student responses and should be immediate.

***Programs that contain quizzes, drills, and assessment activities should have a built-in record-keeping system.*** This system should calculate student scores and keep track of student improvement. An additional benefit is had when the program will print a hard copy of the student record to be used as needed.

***Good educational software often has provisions for teacher modification,*** to individualize the program to meet specific student needs or to address topics of current importance to the class. This should be easily done, with clear, consise directions for the teacher.

***Lastly, a valuable software package will have good, comprehensive support materials:*** manuals, worksheets, handouts, overlays, posters. These materials should relate to the content material of the software program. They should be supplemental, not integral, to the program so that the program can be used without them. The materials should be free to be copied and distributed as needed by the teacher, so it is not necessary to purchase new materials related to the same program at a later date. The initial money spent on a software program should be the last financial outlay that has to be made for that specific package. This, of course, excludes multiple copy or textbook purchases.

There is a ***Software Evaluation Form*** in **Appendix A** for determining software suitability for adults, in the areas of curriculum content, software type, and presentation. The form is short and specific to the curriculum areas of adult learners: ABE, GED, HSC (High School Completion), APL, and Computer Literacy. Software evaluations should be based on suitability for use with adult students and not on teacher preference, since that will vary from teacher to teacher.

## Published Software Evaluations

A resource that should not be overlooked is the published software evaluation. Many educational packages have been evaluated in magazines, by special interest groups, through clubs and consortiums, and so on.

These evaluations can be helpful in getting a picture of specific program characteristics. However, adult educators must keep in mind that most published evaluations are written with school-age children in mind as end users. In some cases, this software is just not suitable for adults, regardless of how educationally sound it may be.

Two software evaluation documents that are of specific interest to ABE teachers are the following:

**Microcomputers in Adult Basic Education**
ERIC Document Reproduction Service
3900 Wheeler Avenue
Alexandria, Virginia 22304
800-227-3742

This document is the outgrowth of a project related to implementing CAI in Adult Basic Education Programs. The project evaluated hundreds of software programs considered appropriate for adults, especially in GED skill areas. The final report is available through ERIC at the above address. Reference should be made to document *ED 240 326. The report can be ordered on paper or microfiche. The paper copy will cost under $20.00.

**A Microcomputer Bibliography**
**for ABE/GED/Basic Skills Instruction**
The New Jersey Adult Education Dissemination Project
Office of Adult Continuing Education
Triad Building/B-Wing
Glassboro State College
Glassboro, New Jersey 08028

This bibliography contains descriptions and evaluations of more than 70 CAI software packages suitable for use with adult students. The publication also has a listing of 50 titles of free and inexpensive software packages, and information about microcomputer catalogs, newsletters and periodicals. Finally, there is a description of 5 career-oriented software packages.

## Copying Software

Microcomputers can offer significant educational benefits to ABE staff and students. However, any microcomputer operation is only as good as the software which directs it. The successful introduction of educational microcomputing relies not only on choosing the right software, but on having enough variety and individual copies to run a facility.

Teachers need more than one copy of certain programs to use them effectively with their students. Likewise, given the individualized nature of an ABE classroom, teachers also need a variety of software programs to cover the numerous individual curricular needs present at any given time.

Copying software is an issue that revolves around these two needs, ***sufficient number of copies*** and ***variety of topics***. Teachers must be aware of copyright laws and work within the legal framework to build software banks and libraries that meet their needs.

The right to copy specific software is directly related to the classification under which that software resides.

**Commercial Software**: This is usually copyrighted, published software for sale. Commercial software represents the work of an author or publishing company and its sale determines their livelihood. Illegally copying this software is direct theft of their work product, which is something that belongs to them like any other personal possession.

**Public Domain Software**: This category consists of programs which are not copyrighted and may be freely copied. A program is considered public domain when it has been placed in that category by the author or when the copyright protection has expired. There are thousands of programs in this category.

**Free, Almost-Free Software**: There are software sources that require only a small investment in time and/or money. Some user's clubs or other groups will copy programs for the cost of a disk. Programs can be downloaded for only the cost of a telephone call, with the right equipment. There are programs in computer magazines that are available at the cost of time it takes to put them on a disk.

The next few sections of this chapter will discuss sources for free and low-cost software. However, an understanding of the copyright law is necessary at this point so ABE staff members know the parameters within which they must operate, while setting up software libraries.

## Dealing With Copyright: Some Suggestions

**The Copyright Law**: The law permits the purchaser of the software program to make ***one*** copy for back-up purposes only. This is to be an "archival" copy, for use when and if something happens to the original. The back-up copy must be destroyed or given to the new owner, should the original software change hands.

The copyright law places severe restrictions on software users and hinders the establishment of a software library for student use. However, there are ways to deal with this situation while remaining within the realm of legality.

***Have students take turns using disks.*** This puts the emphasis on effective organization and classroom management.

***Network microcomputers in the classroom.*** A network allows the teacher to download software to several computers in a room via cable from a main station. It is necessary to check this out, relative to specific circumstances, since some software will not work in a network set-up.

***Purchase a multiple-user license.*** This is available only from certain publishers.

***Place the software emphasis on public domain and/or teacher developed software.*** The widespread availability of public domain software gives the teacher an almost limitless supply of relevant educational software. The key is in knowing where to find it.

Furthermore, there are ***authoring systems*** available on the market which help the teacher create original, professional-quality software with no prior programming experience. This skill could be taught to teachers in staff development sessions. Authoring software is easier than regular programming and the resulting products could be shared among ABE programs statewide, through a software networking system.

There are other ways to circumvent the copyright problem. Several of these are covered later in this chapter, in the discussion on software resources.

# Software Resources

There are many sources of educational software. The key to effective educational microcomputing is to get the most and best for your dollar. This section deals with sources for educational software and is divided into three parts: **commercial software, MECC,** and **free/almost free software** (including public domain).

## Commercial Software

Commercial software, as defined here, is that which is copyrighted and sold through a publishing house. It is a product that represents the livlihood of an author and as such cannot be freely copied by users.

There are hundreds of commercial software publishers, many of whom produce a large volume of educational programs. The price range varies greatly with the product, but many packages can be quite expensive. The inability to make extra copies for wide student use is a factor to be considered in making commercial software purchases.

This **Handbook** is more concerned with low-cost sources of ABE-suitable software. The topic of **commercial software** is addressed only lightly, and as follows:

***The Annotated Software Bibliography contains some commercial programs that are ABE-suitable.*** These are programs that have been used successfully in ABE programs, either with students or as program management tools.

***There is a list of commercial software publishers in Appendix C at the end of the Annotated Software Bibliography.*** This list includes those publishers whose products have been annotated in the **Bibliography**, as well as others who produce software with enough content sophistication and topic relevancy to be used by adult students of varying achievement levels.

***The following guides and directories are among those available to assist educators in determining what commercial educational software is available:***

Swift's Educational Software Directory
Sterling Swift Publishing Company
7901 South I-35
Austin, Texas 78744

Educational Software Directory,
A Subject Guide to Microcomputer Software
M. J. Chartrand and C. D. Williams, Compilers
Libraries Unlimited, INC.
P.O. Box 263
Littleton, Colorado 80160

Classroom Computer Learning Directory
of Computing Resources, Part A & B
Pitman Learning, INC.
19 Davis Drive
Belmont, California 94002

The SpecialWare Directory
Software Sources for Special Education
LINC Associates, INC.
46 Arden Road
Columbus, Ohio 43214

There are other resources to use in making commercial software decisions. Software reviews and evaluations in magazines and newspapers are a valuable aid in making choices. Though most reviews are not referenced to the ABE student, there is usually a good indication of the content and style of the piece of software.

As important as prior research is to the wise choice of commercial software, mistakes will be made. Some software will arrive and, upon close scrutiny, be determined useless for the needs of a particular class. It is important to return unusable software to the publisher and get a refund or exchange. Most publishers will not send software for preview, but do offer a money-back guarantee if not satisfied.

## MECC

**MECC** software falls somewhere between **commercial software** and **free/almost free software**. The MINNESOTA EDUCATIONAL COMPUTING CONSORTIUM was established in 1973 to help Minnesota schools implement educational computing. **MECC** has developed a wide range of educational software, spanning the curriculum spectrum, and dealing with achievement levels from beginning to advanced.

**MECC** software is available to Minnesota educators free of charge, and at relatively low prices to educators in other states. The cost of **MECC** software to specific ABE programs will depend largely upon circumstances and connections. If an ABE Program is connected to an organization which has obtained a **MECC** membership, software can be obtained at very little cost. In other cases, the price depends upon the member distributor's established procedures.

MECC offers several other services to educators, as follows:

MECC ***publishes a free educational computing catalog.*** This catalog lists **MECC's** software, including instructional programs, staff development and training materials, and administrative software. The catalog is available by writing or calling the **MECC** Distribution Center:

**MECC Distribution Center**
3490 Lexington Avenue North
St. Paul, Minnesota 55112
612-481-3527

***MECC conducts educational computing workshops throughout the United States.*** There is a charge for this and arrangements can be made by calling **MECC** User Services at 612-481-3621.

***MECC publishes an educational computing newsletter.*** This newsletter is published throughout the school year and deals with **MECC** news, training materials, and educational software. To get on the mailing list, call 612-481-3606.

***MECC operates a help-line for those using MECC software and experiencing a problem with it.*** Users may call the help-line to describe their problem, at 612-481-3660.

All **MECC** software packages include a program diskette, back-up diskette, and manual. The manual contains instructions, handouts, worksheets, and other support materials.

## Free/Almost Free Software

Free or almost free software is available in great abundance to those educators who know where to look for it. Topics range from beginning reading through detailed scientific analysis, in formats including tutorials, simulations, drill and practice, educational games, assessments, and more. The price tag for these software programs is usually only the cost of the disk and the time it takes to make a copy. Some sources require a small handling charge or require that you swap a program for a program. There are even public domain software libraries from which you can borrow programs at a small fee, copy them for your use, and return the original.

***What is public domain software?*** Public domain software includes programs which have been placed in the public domain by the author, or programs whose copyright protection has run out.

Many authors write programs for their own personal use and have no interest in trying to sell them. They allow other microcomputer users to copy, use, and distribute these programs freely. The only thing they may not do is sell the programs at a profit. Often, the distributor of these programs, whether a user's group, consortium, or other organization, will charge $5.00 to $10.00. This fee covers the cost of the disk, shipping and handling, and a small amount toward the group development of more public domain software.

There is much excellent public domain software, in every conceivable category. However, with free software there are no money-back guarantees. Just as there are many good programs in the public domain, so there are many bug-laden programs. The user must take the good with the bad.

Public domain software often suffers from a severe lack of documentation and user aids. It can be a question of trial and error until the user figures out how to operate the program. As with any other software, it is a good idea to make a back-up copy before beginning to work with a new program. Then if a critical error occurs, the software will not be lost.

Some authors include on-screen help and instructions with their programs. Other authors include their name and phone number at the beginning or end of a public domain program, an invitation for you to contact them if you have any trouble with the software.

In summary, public domain software can be the cornerstone of a microcomputer program, if its acquistion is based on sound research. Each program should be tried out, the good ones saved, and the worthless ones discarded. A library should be developed, all software catalogued, and notes kept on each program. Several ABE Programs could work together to establish a comprehensive, freely distributable bank of educational software suitable for adult students. The concept could be further carried out on a statewide basis, as a software network or consortium for ABE staff and students.

The following sections discuss sources of free/almost free software, most of it in the public domain. Many of these sources also offer other services to educators, and these services are also described.

## *Users' Group, Clubs and Consortiums*

Users' groups are everywhere, existing for every type of computer and for any specific interest. These users' groups, clubs, and consortiums offer large public domain software libraries, newsletters, and product information to members and non-members. Many users' groups have special interest groups (SIGs) for members with specific areas of concern: education, science, business, and so on.

Many users' groups require membership before services can be rendered. Others simply charge more to non-members than they do to members. Either way, they are a valuable source of free/almost free software, as well as other types of assistance. It is not necessary to live in an area to be a member of a users' group, since most groups communicate regularly via mail or electronic bulletin board. Some public domain software can be downloaded over the telephone via modem.

The following user's groups have SIG's dedicated to educational microcomputing or are themselves educational organizations. New users' groups begin daily and others die out, so there are limitless opportunities to make valuable microcomputing contacts. The cost for services described below has been ommitted, since it is subject to change. Organizations can be contacted directly for specific information.

**The International Apple Core**
**IAC-Education Special Interest Group**
908 George Street
Santa Clara, California 95050
408-727-7652

The IAC has a large library of public domain educational software, donated by educators from all over the world. IAC publishes a magazine, APPLE ORCHARD, which contains a regular feature on educational microcomputing.

**Washington Apple Pi, Ltd.**
8227 Woodmont Avenue
Suite 201
Bethesda, Maryland 20814
302-654-8060

Apple Pi has an excellent library of public domain software and a vibrant educational special interest group (EdSIG). The group publishes a monthly journal and runs an electronic bulletin board for news and communication. The bulletin board is run in connection with the DISABLED SIG from Apple Pi.

**Apple For The Teacher**
2331 Rainbow Avenue
Sacramento, California 95821

This is an educators' users' group which publishes a newsletter dealing with grant sources, software reviews, and educational microcomputing. The group also provides for the exchange of software and information among educators.

**A.P.P.L.E.**
21246 68th Avenue South
Kent, Washington 98032
206-872-2245

The Apple Puget Sound Program Library Exchange disseminates public domain educational software, publishes a magazine, CALL A.P.P.L.E., with regular educational features, and operates an electronic bulletin board. This users' group also operates a Technical Hot-Line, staffed by volunteers, to answer member programming and equipment problems.

**CUE**
Don McKell
Computer-Using Educators
CUE Membership
P.O. Box 18547
San Jose, California 95158

Computer-Using Educators is a Group of over 5,000 educators from around the world, based in California. CUE publishes a bi-monthly newsletter and disseminates public domain software from its large library. The software dissemination project is called SOFTSWAP and offers public domain software by mail to members and non-members. Software programs can be "swapped" for an even exchange or purchased at a nominal price. SOFTSWAP operates from the following address:

Ann Lathrop, Chairperson
Microcomputer Center
SMERC Library
San Mateo County Office of Education
333 Main Street
Redwood City, California 94063

**Educational Computer Consortium of Ohio**
4777 Farnhurst Road
Cleveland, Ohio 44124
216-461-0800

ECCO provides its members with access to a library of public domain, educational software to copy, and commercial software to preview. ECCO also puts out a newsletter, offers consulting services to schools, and maintains a library of other educational microcomputing resources such as books, magazines, and audio-visual aids. MECC software is also available through ECCO for member school districts. There is a charge for the MECC software and materials.

## Ohio Apple Users' Groups

The following users' groups are located at various points in Ohio. The services they offer include such things as technical advice and support, electronic bulletin boards, newsletters, resource centers, and the dissemination of public domain software. Specific group services can be identified by contacting the group in closest proximity to your ABE Program. This is a partial listing, as there are many other users' groups around, both large and small. Your local computer store can usually give you a name or number to contact.

These groups are not specifically education-oriented, but can nevertheless offer a variety of helpful services. Specific contact persons change periodically, but the addresses below offer a starting point.

**Neo Apple Corps**
Tom Wysocki
7047 East Jefferson Drive
Mentor, Ohio 44060

**The Country Computer Club**
Elec. Cntr/N. Russell
8769 Townsinfo RD 513
Shreve, Ohio 44676

**C.O.A.C.H.**
Travis Risner
193 Hamilton Avenue
Westerville, Ohio 43081

**ASCC**
Chuck Savage
1175 Linden Avenue
Akron, Ohio 44310

**Apple Friendly**
Robert Hartman
9680 Crackel Road
Aurora, Ohio 44202

**Wendy's Int'l Inc.**
Thomas Mulcahy
4288 W. Dublin-Granville Rd.
Dublin, Ohio 43017

**Akron Apple Association**
Richard L. Meyers
679 S. Cleveland Avenue
Mogadore, Ohio 44260

**Mahoning Valley Apple**
Gary Bennett
5066 Mahoning Ave NW
Warren, Ohio 44483

**Apple - Dayton**
Gary Adams
101 Dupont Way
Wright Patt. AFB, Ohio 45433

**Rubber Apple Users Group**
Robert Nebiker, President
1870 Brookfield Drive
Akron, Ohio 44313

**Toledo Apple Users**
Carl Narvardo
14261 Georgetown Drive
Bowling Green, Ohio 43402

**Apple-Ciders**
Cindy McDaniels, President
5001 Relleum Avenue
Cincinnati, Ohio 45238

## *Other Groups as Sources of Public Domain Software*

There are other projects and organizations offering access to public domain software. These groups, like the users' groups, often provide other support services for educators.

**TABS Project**
Dr. Suzanne K. Damarin
Arps Hall 202-A
1945 N. High Street
Columbus, Ohio 43210
614-422-1257

The TABS Project is currently developing and disseminating Apple public domain software in the curriculum area of mathematics.

**National Diffusion Network**
Department of Education
Att: Dr. Lee Wickline
Suite 714-Brown
Mail Stop 30
400 Maryland Avenue, S.W.
Washington, D.C. 20202

The National Diffusion Network has been funded by the U.S. Department of Education to identify quality public domain software for educators. The Network will help interested schools locate this software and adapt it for their use. There is a minimal cost for this service. There is also a state representative to assist local educators in finding and obtaining this high-quality public domain software.

Ohio Facilitator
National Diffusion Network
Ohio Department of Education
Division of Planning & Evaluation
65 South Front Street, Room 802
Columbus, Ohio 43215
614-466-3825

For Further Information:
Educational Alternatives, Inc.
P.O. Box 265
Port Tobacco, Maryland 20677

## *Software Exchange Sources*

Some programs offer a software exchange arrangement through which interested parties swap programs, disk for disk in an even exchange. There is usually no charge for this as each party takes care of postage and handling costs. The following are some software exchanges which deal with public domain educational software:

**Softswap**
Anne Lathrop, Chairperson
Microcomputer Center, SMERC Library
San Mateo County Office of Education
333 Main Street
Redwood City, California 94063

SOFTSWAP disseminates educational public domain software through the user's group, Computer-Using Educators (CUE). Each dissemination disk contains up to 28 programs, including drill & practice, simulations, tutorials, and learning games. All public domain programs in the SOFTSWAP library have been previewed and evaluated for effectiveness before being included. Disks can be "swapped" for other original programming or ordered outright for a small duplication fee.

**Software Exchange Catalog**
Young People's Logo Association
P.O. Box 85507
Richardson, Texas 75085

This free catalog lists public domain software available for exchange. Educational programs are included in Logo, PILOT, and BASIC. Send a large, self-addressed envelope and $.71 postage for a copy.

**The Public Domain Exchange**
673 Hermitage Place
San Jose, California 95134
408-942-0309

This exchange provides public domain software for Apple microcomputers. There are more than 275 disks available in many subjects, including education. Programs can be exchanged or purchased at a nominal charge.

**Center for Math Literacy**
San Francisco State University
1600 Holloway Avenue
San Francisco, California 94132

**Micro X Change**
Suite 101
222 East Carrillo Street
Santa Barbara, California 93101

**Apple Avocation Alliance**
721 Pike Street
Cheyenne, Wyoming 82001

The AAA has a library of 217 public domain disks, edited and arranged on disks by subject. Disks can be traded or purchased outright at a reasonable fee.

**EMUG**
Educational Microcomputer Users' Group
State University New York at Oswego
102 Council Place
Liverpool, New York 13088
Jane McCrohan
315-457-4618

**ComputerTown! USA**
1263 El Camino Real
Menlo Park, California 94025
415-323-3111

ComputerTown, USA is a computer-literacy movement offering a variety of services, including a bi-monthly news bulletin, microcomputer user assistance, and software exchange. There is a ComputerTown site located in Columbus, Ohio, at the following address:

Ms. Linda Briggs, Chairperson
Community Involvement Program
Upper Arlington Public Library
Upper Arlington, Ohio

## *Software Libraries*

Some public libraries have software on loan along with other information materials. Not all of this software is public domain, however, so the user must be careful not to copy copyrighted material. There are also libraries set up for the specific purpose of lending public domain software for copying. There is usually a membership or per-disk charge for this.

**National Software Lending Library**
PO Box 360
Damascus, Maryland 20872
301-428-9694

Membership in this lending library provides free use of thousands of public domain software programs on loan by mail. Programs are available in the areas of education, business and finance, utilities, home and hobby, games, music, and art. Since these programs are public domain, they may be copied freely while on loan to members.

## *Electronic Bulletin Boards*

Electronic bulletin boards represent one of the most exciting uses of microcomputer technology, adding a new dimension to educational microcomputing. These bulletin boards have sprung up all over the country, each one a storehouse of microcomputing information and public domain software.

Electronic bulletin boards are made possible by the computer's ability to accept input from a variety of devices. The bulletin board uses ordinary telephone lines to impart its information to the user. Essentially, it involves a hook-up of two or more computers which speak to each other.

A microcomputer must be equipped with a ***modem*** to take advantage of the electronic bulletin board network. The modem translates the computer signals as they come across the telephone lines and interprets them for the user. The user simply dials the telephone number of the bulletin board, hooks up the modem, and begins to access information from the transmitting computer.

Users' groups, computer hobbyists, special interest groups, professionals, children, and just about anyone who has the proper equipment can phone into a bulletin board, leave messages, share information, ask questions, make new friends, and ***download free software***.

Downloading software from a bulletin board is an exciting and easy way to build a library of relevant public domain software, particulary when dealing with special interest group (SIG) bulletin boards. The information stored on bulletin boards changes daily, so it beneficial to access a board frequently if it is a good source for your particular program objectives.

It is necessary to understand, when dealing with bulletin boards, that they come and go with great regularity. Bulletin boards die out and new ones are established daily. The following list contains bulletin boards that are currently available, with educational emphasis and/or local orientation.

Keep in mind that bulletin boards can be of service to educators even if they are not specifically for educational SIGs. There is much technical information and utility programming available on almost any bulletin board.

**People's Message System**
619-561-7277

This bulletin board operates out of Santee, California. It is a good place to start, since it maintains a list of over 600 bulletin boards currently in operation. Boards come and go with great regularity and this list is continually being updated. It is a source of current information on available bulletin boards.

**Ed Tech PMS**
619-265-3428

This bulletin board is available evenings and weekends. It is operated by the San Diego State University, Department of Educational Technology.

**Living Tree BBS**
415-565-3037

This bulletin board was created specifically for educators by the Far West Laboratory for Educational Research and Development.

**Educational Bulletin Board System**
602-783-0485

This bulletin board works out of Yuma, Arizona. It provides hardware and software information pertinent to educators and has public domain software contributed by teachers and available for downloading.

**Compuserve Information Service**
5000 Arlington Centre Blvd.
P.O. Box 20212
Columbus, Ohio 43220
800-848-8990
614-457-8600

This is an on-line database service, offering a large variety of services from electronic mail to shopping and banking by computer. There is an abundance of public domain software in every imaginable category and for every type of microcomputer. There is a subscription fee to belong to Compuserve, as well as an hourly "on-line" rate.

## *Magazines, Books and Other Printed Materials*

Many computer magazines contain software program listings. The reader must enter the listing into the microcomputer and save it on disk. This can be a time-consuming task, but some of the free programs are well worth the effort. These magazines also provide a lot of other useful information to help educators get more effective use from microcomputer technology.

**The WAP Journal**
Washington, D.C. Apple Pi, Ltd.
8227 Woodmont Avenue
Suite 201
Bethesda, Maryland 20814

This is the monthly magazine of the Apple Pi user's group. It contains program listings and includes special educational applications.

**NIBBLE**
P.O. Box 325
Lincoln, MA 01773

This monthly magazine is full of program listings and microcomputer information.

**InCider**
Wayne Green, Inc.
80 Pine Street
Peterborough, New Hampshire 03458
603-924-9471

This magazine offers microcomputer-related articles specific to the Apple family of computers. It has public domain software listings and is planning to offer public domain software on disks soon.

There are numerous other magazines containing software listings. One has only to go to any book or computer store and browse. Other educational microcomputing magazines are discussed later in the **Handbook**, in the chapter on ***Other Microcomputing Resources for ABE***.

## ***Teacher-Developed Software***

An obvious source of low-cost software is that developed by teachers for their own use. There are several ways this can be done.

Those teachers who have the knowledge can program their own software, using whatever programming language they wish. This can be very time-consuming, however, and the final product is often visually unappealing. Professional programmers have all the time in the world to incorporate graphics and sound routines into their programs, to give them additional appeal and holding power. Teachers, on the other hand, must program software in their spare time. Consequently, dress-up routines are often ommitted. It can be argued that such routines are "frills" and, therefore, unnecessary. However, those "frills" can spell the difference between a program that captures the student's mind and one that is merely tolerated.

An alternative to ***programming*** software, is ***authoring*** software. A teacher can develop professional-quality software with ***no previous programming experience***. The software developed will have sound and graphics routines, and can address any educational topic.

There are many authoring systems on the market. Once purchased, a good authoring system can be used to create a limitless supply of ABE-specific software. A topic for productive and worthwhile staff development sessions would be to learn how to use a good software authoring system.

The disk, **ABE Microcomputer Workshops**, described in the **Annotated Software Bibliography**, was created using the authoring system listed below:

**Apple Superpilot**
Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, California 95014
408-996-1010

It is not necessary to order this authoring system from the above address as it can be readily purchased from most Apple dealers. This package provides the non-programmer with the ability to create software containing color graphics, sound effects, double-sized letters, and student record-keeping procedures. The package includes a two-disk, hands-on tutorial called CO-PILOT.

There are also "mini-authoring" systems which can be used to create and customize software disks, within predesigned frameworks. One such system is MECC's **Master Spell** which is described in the **Annotated Bibliography**. This program allows the teacher to create customized spelling programs to meet the needs of specific achievement levels, classes, or curriculum topics. There are "mini-authoring" systems for English, reading, mathematics, and many other curriculum areas.

## Summary

The resources listed in the previous section are only a sampling of what is available in each category. New groups and products become available daily, and former resources disappear. Serious microcomputer users should try to stay abreast of the market by reading microcomputer journals and professional magazines. The payback is well worth the effort.

Two books that contain much valuable information regarding free software sources are:

**Free Software for Your Apple**
by David and Dorothy Heller
Copyright 1984
Enrich/Ohaus, Publishers
2325 Paragon Drive
San Jose, California 95131

**How to Get Free Software**
by Alfred Glossbrenner
Copyright 1984
St. Martin's Press
175 Fifth Avefnue
New York, New York 10010

There are other microcomputer resources of great help to educators which do not primarily on software. These are listed in the chapter on ***Other Microcomputing Resources for ABE***.

# Staff Development

ABE Staff Development needs to be approached on two levels, in dealing with microcomputers and computer literacy:

**Personal computer literacy**: Staff members need a basic level of computer literacy for themselves before they can effectively use microcomputers with their students.

**Professional computer literacy**: Once they are personally comfortable with the potential of the microcomputer, the staff can explore ways to use the technology in their ABE classrooms.

Both levels include the ability to use microcomputer applications such as data-base, word-processing and electronic spreadsheet applications.

## Topics for ABE Staff Development

All of the topics listed below deal with concepts of computer literacy important to ABE teachers. Beneath each topic heading is a listing of sub-topics and related microcomputer terminology .

Planning ABE Staff Development must include consideration of the amount of time allotted, resources/equipment available, and specific program plans for the use of microcomputers. Consequently, some of the topics below may need to be omitted or only lightly covered. In subsequent sections, suggested **AGENDAS** will be given for assorted time frames.

### *Anatomy of the Microcomputer*

**Types of Computers**

- Mini Computer
- Microcomputer
- Mainframe Computer
- Generic Computer

**Hardware Componenets**

- Disk Drive
- Printer
- Hard Disk
- Modem
- Peripherals
- Interface
- Monitor
- Central Processing Unit

**Inside the Microcomputer**

- 80-Column Card
- Controller Cards
- Silicon Chips
- Memory: RAM & ROM, K
- Expansion Slots
- Integrated Circuits

## *Communicating with the Microcomputer*

**Floppy Disks**

- System Master
- Data Disk
- Tracks
- Volume
- Utilities
- DOS/ProDOS
- Sectors
- Catalog
- Operating Systems
- Program Disk
- Write-Protect
- Initialize/Format

**Speaking the Language of the Microcomputer**

- Boot
- ASCII
- Binary System
- Input
- Hard Copy
- Flowchart
- DOS Commands
- Prompt
- Bits and Bytes
- Software
- Output
- Cursor
- Bug/Debug
- BASIC
- Programming Languages
- Application Programs
- Hexadecimal System
- High Level Languages
- Low Level Languages
- Authoring Languages

## *Computer-Assisted Instruction*

**Types of Software**

- Tutorial
- Games
- Utilities
- Simulation
- Assessment
- Drill & Practice
- Application Programs

**Software Selection**

- Public Domain
- Freeware
- Random Generation
- MECC
- Copyright
- Mini-Authoring Systems
- Authoring Languages

**Software Evaluation**

**Classroom Management**

**Equipment/Materials Purchase**

### *Personal/Professional Microcomputer Uses*

**Data-Base Management**

Files Records Report Generation

**Word-Processing**

**Electronic Spreadsheet**

**Accounting Applications**

### *Other Topics of Interest*

**Funding Sources**

**Other Educational Microcomputing Resources**

**Keeping Up With Technology**

## Scheduling Staff Development: Agendas

The number and depth of topics covered depends on the amount of time allotted for staff development. In this section, some sample agendas have been presented, weighing the amount of time allotted against the topics that are most important to ABE teachers.

***Suggested time frames can be adapted to meet specific program needs.*** Sessions are listed at three hours each, with representative time periods listed to highlight the relative importance of each topic.

***Specific software programs are suggested for use with each topic.*** The programs suggested are all listed in the **Annotated Software Bibliography**. There are many other programs available that can be used for any given topic, however. Availability will be the determining factor as to which programs are actually used.

***Handouts for many of the suggested activities are included in***

**Appendix A.** These handouts may be duplicated and distributed to workshop participants or made into overlays for group presentations.

***Topics listed in the agendas represent general concepts that should be covered.*** Specific activities in each area must be developed by the workshop presenter, based on time and availability of materials.

## Workshop Length: 2 Sessions

This would be a typical one-day workshop, consisting of morning and afternoon sessions.

### Session One-Morning

**8:30** **Registration**

**8:45** **Introduction**
**Topic:** Microcomputers in ABE
**Hands-On:** Program -> "ABE Microcomputer Workshops: Introduction"

**9:00** **Topic:** The Anatomy of the Microcomputer
**Hands-On:** Program -> "Apple Presents Apple"

**10:00** **Break**

**10:10** **Topic:** Inside the Microcomputer: Anatomy & Operation
**Hands-On:** Program -> "Know Your Apple IIe"
**Topic:** Communicating with the Microcomputer: Programming Languages

**11:15** **Review & Quiz**
**Hands-On:** Program -> "ABE Microcomp. Workshops: Non-Threatening Quiz# 1"
**Session Evaluation**

**11:30** **Lunch**

### Session Two-Afternoon

**12:30** **Review of Terms**

**12:45** **Topic:** Computer Assisted Instruction (CAI) in ABE
**Hands-On:** Simulation: Program -> "Oh, Deer!"
Tutorial: Program -> "Word Herd: Look Alikes"
Drill & Practice: Program -> Speed Drill

Game (Problem-Solving): Program -> "Thinking With Ink"
Assessment: Program -> "GED-100: Pre-GED Module"

2:10 **Break**

2:20 **Topic:** Computer-Generated Instructional Materials for ABE
**Hands-On:** Random-Generation: Disk => Computer-Generated Math, Vols. 1&2
Mini-Authoring Systems: Program -> "Study Guide"
Utilities: Program -> "Master Spell"

3:20 **Review & Quiz**
**Hands-On:** Program ->"ABE Microcomp. Workshops: Non-Threatening Quiz #2"
**Session Evaluation**

3:30 **End of Workshop**

## Workshop Length: 3 Sessions

This workshop would consist of three sessions, typically morning, afternoon and evening.

**Session One-Morning**

8:30 **Registration**

8:45 **Introduction**
**Topic**: Microcomputers in ABE
**Hands-On:** Program -> "ABE Microcomputer Workshops: Introduction"

9:00 **Topic:** The Anatomy of the Microcomputer
**Hands-On:** Program -> "Apple Presents Apple"

10:00 **Break**

10:10 **Topic:** Inside the Microcomputer: Anatomy & Operation
**Hands-On:** Program -> "Know Your Apple IIe"
**Topic:** Communicating with the Microcomputer: Programming Languages

11:15 **Review & Quiz**
**Hands-On:** Program -> "ABE Microcomp. Workshops: Non-Threatening Quiz# 1"
**Session Evaluation**

11:30 **Lunch**

## Session Two-Afternoon

12:30 **Review of Terms**

12:45 **Topic:** Dealing With Disks: DOS Commands
**Hands-On:** Disk => System Master Disk

1:40 **Break**

1:50 **Topic:** Introduction to Computer-Assisted Instruction (CAI) in ABE
**Topic:** Computer-Generated Instructional Materials for ABE
**Hands-On:** Random-Generation: Disk => Computer- Generated Math, Vols. 1&2
Mini-Authoring Systems: Program -> "Study Guide"
Utilities: Program -> "Master Spell"

3:20 **Review**
**Session Evaluation**

3:30 **Dismissal**

## Session Three-Evening

6:30 **Review of Terms**

6:45 **Topic:** Computer-Assisted Instruction (CAI) in ABE (continued)
**Hands-On:** Simulation: Program -> "Oh, Deer!"
Tutorial: Program -> "Word Herd: Look Alikes"
Drill & Practice: Program -> Speed Drill
Game (Problem-Solving): Program -> "Thinking With Ink"
Assessment: Program -> "GED-100: Pre-GED Module"

8:00 **Break**

8:10 **Topic:** Software for Adult Basic Education
**Hands-On:** Software Evaluation: Assorted Disks

9:15 **Review & Quiz**
**Hands-On:** Program -> "ABE Microcomp. Workshops: Non-Threatening Quiz #2"
**Session Evaluation**

9:30 **End of Workshop**

## Workshop Length: 4 Sessions

This would be a typical two-day workshop, including both morning and afternoon sessions each day.

### Session One - Day One, Morning

**8:30** **Registration**

**8:45** **Introduction**
**Topic**: Microcomputers in ABE
**Hands-On:** Program -> "ABE Microcomputer Workshops: Introduction"

**9:00** **Topic:** The Anatomy of the Microcomputer
**Hands-On:** Program -> "Apple Presents Apple"

**10:00** **Break**

**10:10** **Topic:** Inside the Microcomputer: Anatomy & Operation
**Hands-On:** Program -> "Know Your Apple IIe"
**Topic:** Communicating with the Microcomputer: Programming Languages

**11:15** **Review & Quiz**
**Hands-On:** Program -> "ABE Microcomp. Workshops: Non-Threatening Quiz#1"
**Session Evaluation**

**11:30** **Lunch**

### Session Two - Day One, Afternoon

**12:30** **Review of Terms**

**12:45** **Topic:** Dealing With Disks: DOS Commands
**Hands-On:** Disk => System Master Disk

**1:40** **Break**

**1:50** **Topic:** DOS Commands, System Utilities
**Topic:** Flowcharts
**Hands-On:** Basic BASIC Programming

**3:15** **Review**
**Session Evaluation**

**3:30** **Dismissal**

## Session Three - Day Two, Morning

8:30 **Review of Terms**

8:45 **Topic:** Computer Assisted Instruction (CAI) in ABE
**Hands-On:** Simulation: Program -> "Oh, Deer!"
Tutorial: Program -> "Word Herd: Look Alikes"
Drill & Practice: Program -> Speed Drill
Game (Problem-Solving): Program -> "Thinking With Ink"
Assessment: Program -> "GED-100: Pre-GED Module"

10:10 **Break**

10:20 **Topic:** Computer-Generated Instructional Materials for ABE
**Hands-On:** Random-Generation: Disk => Computer- Generated Math, Vols. 1&2
Mini-Authoring Systems: Program -> "Study Guide"
Utilities: Program -> "Master Spell"

11:20 **Review & Quiz**
**Hands-On:** Disk => ABE Microcomputer Workshops: Non-Threatening Quiz #2
**Session Evaluation**

11:30 **Lunch**

## Session Four - Day Two, Afternoon

12:30 **Review of Terms**

12:45 **Topic:** Sources of Software for ABE
**Topic:** How to Evaluate/Select Software
**Hands-On:** Software Evaluation: Assorted Disks

2:00 **Break**

2:10 **Topic:** Software for ABE, continued
**Hands-On:** Software Evaluation: Assorted Disks

3:20 **Review**
**Session Evaluation**

3:30 **End of Workshop**

# Additional Staff Development Suggestions

The agendas presented in the previous section represent only the most basic elements of ABE staff computer literacy. Wherever possible, staff development computer literacy programs should consist of more than two to four sessions. A more realistic time frame in which to work would consist of five days, or the equivalent of ten 3-hour sessions.

The extended time could be used effectively in several ways. Suggested areas of expanded staff-development session coverage include:

**--> Expanded Coverage of Basic Topics**
**--> Personal & Professional Microcomputer Uses**
**--> Individualized Study/Projects**

## Expanded Coverage of Basic Topics

More time should be spent on the basic topics: anatomy and operation of the microcomputer, system utilities, terminology, computer-assisted instruction (CAI), software selection, development and use, and classroom management.

## Personal & Professional Microcomputer Uses

ABE staff development should include a presentation of program management applications: data-base management, record keeping and report-generating programs, word-processing, accounting, and electronic spreadsheet applications.

***Word-Processing*** A simple, easily-learned word-processing package should be used for this exercise. The package should, however, include those features that make word-processing more efficient and effective than regular typing. Two packages that might be considered for this activity are Applewriter IIe and the word-processing module from the Appleworks package. Both are for the Apple II family of computers.

A staff development session on word-processing should include a presentation of the basic commands/operations of the program being used and a hands-on session in which staff members do some word-processing of their own. For example, staff members could be provided with a disk containing a mistake-laden piece of creative writing and given the task of making corrections, using the word-processor. There is a sample handout for this activity in ***Appendix A***.

***Electronic Spreadsheet***: The electronic spreadsheet is a truly versatile program that can be used for numerous ABE program management activities: accounting and financial record-keeping, program planning and budget projections, teacher record-keeping in areas such as grading, test-averaging and attendance control.

There are several good electronic spreadsheet programs on the market. Again, it is best to choose one that is quick and easy to learn but still contains most of the features that make electronic spreadsheeting an indispensable program management tool. Two programs that fit this description are Visicalc and Multiplan.

After an explanation of the features and commands of the electronic spreadsheet being used, the staff should move to a hands-on activity. ***Appendix A*** contains a spreadsheet activity very appropriate to ABE. Using a pre-designed template, participants are asked to take a lump sum of money and set up an ABE Learning Center, making financial plans and decisions about equipment, furniture, staff, instructional materials, and so on. The electronic spreadsheet performs the necessary calculations and projections, as staff members make decisions and modify them as needed, based on feedback from the microcomputer.

***Data-Base Management***: Data-base management activities cover a wide range of possibilities. For ABE program management purposes, simple record-keeping, filing, and report-generation applications should suffice.

Two packages that combine many of the best features of a good database package are Quick-File and the data-base module from Appleworks. These programs are both written for the Apple II family of computers.

Staff development activities should include an explanation of the features common to good data-base packages, data-base related terminology, and the commands specific to the data-base package used for staff development.

As in all staff development sessions, the most beneficial activities are hands-on. Teachers could be asked to structure a data-base file using statistical data about imaginary ABE students. Once the file is set up, they should enter the data and then generate sample program impact reports.

## Individualized Study/Projects

Individualized study is a very effective method for improving staff computer literacy. A time allotment of 6-15 hours can be set aside for those participants wishing to increase their knowledge and experience with microcomputers.

Individualized study should be arranged at times convenient to participants. It should be limited to small groups, each person with a microcomputer, and there should be a knowledgeable staff person present to assist.

Goals for individualized study are:

- -To help participants become at-ease and accomplished in at least *one* area of microcomputing
- -To develop ABE-relevant materials, concepts, and activities that can be shared with other ABE staff and programs.

Individual study projects can be chosen from the following:

ABE Microcomputer Software: Selection & Evaluation
Authoring ABE Courseware
Word-Processing Applications
Data-Base Management
BASIC Programming
Electronic Spreadsheet Applications
Computer-Generated ABE Materials
Curriculum Development: ABE Computer Literacy
Other Pertinent Areas of Individual Interest

# Workshop Presentation Suggestions

The actual presentation of workshop sessions will be made smoother and more effective by following certain procedures:

***Send out a questionnaire to all participants prior to the workshop to determine their current level of microcomputer expertise.*** This is an effective way to tailor the microcomputer workshop activities to the level of the participants. Included on the questionnaire should be a place for staff to indicate the microcomputer-related topics of most interest to them.

***Appropriate magazine articles, simple worksheets, and other microcomputer-related printed materials should be sent to participants in the weeks prior to the workshop presentation.*** This starts staff participants thinking in terms of microcomputers and raises pertinent questions in their minds. It is a good way to establish an atmosphere of anticipation and a predisposition to learning microcomputer concepts. Materials distributed at this point should be short, easily understood, entertaining, and relevant.

***Make sure there is a microcomputer for each workshop participant.*** This provides more hands-on time and, consequently, more in-depth learning.

***Outline workshop goals and reasonable expectations for participants early in the first session.*** Let the participating staff know what they will learn and how much. The first microcomputer staff development workshop will not give participants an in-depth understanding of microcomputer use. They should be prepared to spend some time on their own to further their understanding and ability. The staff development leader should provide the opportunity for them to do this. The expression "use it, or lose it," has special significance when dealing with concepts learned in computer workshops.

***Use different-colored paper for workshop handouts.*** When participants have several handouts, a microcomputer, and various floppy disks on their desks, it is a lot easier to draw their attention to the "green" sheet, than to have them try to locate a handout by name. This saves time, confusion, and frustration.

***Make handouts into overlays for use on an overhead projector.*** It is often easier to discuss a handout if you can point to specific sections. The use of an overhead projector makes this easier on the presenter and clearer to participants.

***Make large flashcards containing the microcomputer terminology used in workshop sessions.*** These should be large enough to be read from any point in the room, and written darkly with a large-tipped felt pen. During the presentation of a new term or concept, the flashcard can be held up to give a visual confirmation. Then the card should be placed somewhere in the room - on a blackboard ledge, a bulletin board, or attached to the wall with a non-greasy stick-tack material.

Throughout the workshop as the concept involving the term is discussed, the presenter can point to the flashcard for further input. Another effective use of the flashcards consists of handing one to each participant as they return from lunch or at the beginning of a new session. Have that participant explain the term to the group. This is a good jump-off procedure for reviewing terminology prior to beginning a new topic.

***Provide sufficient time for a review of concepts already learned.*** A few minutes of review at the beginning and end of each session is invaluable for aiding retention and building the confidence of participants.

***Use post-tests to determine particpant progress.*** These should, of course, be non-threatening in nature. Generally, in a well-presented workshop, post-tests are a positive experience for participants, giving them a sense of accomplishment about what they have learned.

Be absolutely sure during the workshop session, that you cover all the topics and terms included on the post-test. If you use the disk, **ABE Microcomputer Workshops,** included in this handbook, you will notice there are two post-tests on the disk. These are the quizzes listed in the Agendas earlier in this chapter.

***Boot all copies of all disks to be used in the workshops prior to the day they are needed.*** It is frustrating to presenters and worrisome to participants when a needed disk will not boot during a workshop session. Check out all disks before the workshop begins.

## Staff Development Presentation Aids

***Appendix A*** contains some materials which can be used for Staff Development activities. These sheets can be duplicated and given to workshop participants and/or made into overlays for group presentations.

Many of the aids in ***Appendix A*** are self explanatory and can be used with both staff and students. Other materials require specific equipment configurations, software, and/or supplemental preparation on the part of the workshop presenter.

# Other Microcomputing Resources for ABE

Microcomputing educators have an abundance of resources and support services to help them more effectively do their job. The following materials and resources are among the many that can be used effectively with ABE staff and students.

## *Textbooks and Workbooks*

**Spotlight on Computer Literacy**
Random House, 1982
New York, N.Y.

This worktext deals with concepts of computer literacy and BASIC programming. It contains three units: How Computers Work, Computers in Our Lives, and BASIC programming. The text is clear, well-written, and thorough.

**NEW TECH BOOKS**
Scholastic Book Services, 1984
730 Broadway
New York, N.Y. 10003

This is a series of five student workbooks: Computer Thinking, Understanding Computers, Computer Dictionary, New Jobs/New Technology, and Word Processing.

**COMPUTER TIME**
Educational Insights, 1982
Compton, California 90220

This is a series of three reproducible workbooks: Computer Calling, A Bit of Byte, and The Basis of BASIC. The books cover concepts from computer literacy to the terminology for BASIC programming. The activities in the books can be done with or without a microcomputer, and all materials may be freely copied by teachers for use with their classes. These workbooks are written for intermediate grades, but the format is entirely suitable for adult students.

### Computer Literacy: An Introductory Course

Continental Press, Inc., 1982
Elizabethtown, Pennsylvania 17022

This course contains student worktexts, posters, transparencies, and an optional disk. Concepts covered include computer literacy, anatomy and operation of the microcomputer, BASIC programming, and flowcharts.

### Activity Book for the Bank Street Writer

Scholastic, Inc., 1984
730 Broadway
New York, N.Y. 10003

This workbook is an introduction to the word-processor, Bank Street Writer. It contains an introduction and practice in using this application package.

### Apple for the Beginning Beginner

Enrich/Ohaus, 1983
2325 Paragon Drive
San Jose, California 95131

This text is an easy, informative introduction to the Apple microcomputer. It covers such concepts as hardware, software, programming, graphics, and microcomputer operation. There are numerous examples and sample programs for the beginner to try out.

### Help with Computer Literacy

Houghton Mifflin Company, 1984
1 Beacon Street
Boston, Massachusettes 02108

This softcover text is a comprehensive course on computer literacy. There are exercises at the end of each chapter, as well as a pre and post test for the entire text.

## Reference Books

### Dictionary of New Information Technology

Random House, 1982

This book is a dictionary of computer and technology-related terms.

**The Illustrated Computer Dictionary and Handbook**
Enrich/Ohaus, 1983
2325 Paragon Drive
San Jose, California 95131

This book is divided into two parts. The first part contains an illustrated dictionary of computer terminology. The second part is a handbook containing information on computer history, computer literacy, programming, and miscellaneous concepts of interest to the microcomputer user.

**Computers Made Ridiculously Easy**
by Sally Blotnick
McGraw Hill, 1984

This is a comprehensive explanation of computer principles in down-to-earth terms.

**The Microcomputer Can Be Kids' Stuff**
by Anna Mae Walsh Burke
Hayden, 1983

This is a guide to using microcomputers in the home and school environments.

## *Audio-Visual Materials*

**The Computer Revolution**
Knowledge Unlimited, 1983
Box 52
Madison, Wisconsin 53701

This audio-visual package contains two parts, each with a filmstrip/cassette program and a booklet. Part One presents the history and evolution of the computer, from the abacus to its current level of technology. This part also covers the anatomy and operation of the computer. Part Two covers the computer revolution, from the 1960's to the present.

**Making the Most of the Micro**

This video-cassette series is available for taping from many public television stations. It is a ten-part series designed to maximize effective use of home, personal, and business microcomputers.

### Adventures of the Mind

This six-part video-cassette series is available for taping from the public broadcasting service. Each segment is 15 minutes long, and topics include exploring microcomputer applications and the impact of computing on the individual and society.

## *Curriculum Aids*

### 101 Activities for Computer Classes
MECC, 1982

This material contains reproducible worksheets and activities for use in a computer literacy course.

## *Staff Development Materials*

### Computers in the Mathematics Curriculum
MECC, 1984

This is a training manual for use in staff development. It contains notes, transparency masters, and handouts for activities related to mathematics instruction. Topics cover mathematics software, utilities, programming, and curriculum.

### Using the Computer in the Classroom
MECC, 1983

This is a complete introductory course in educational microcomputing. The manual contains transparency masters, student handouts, and activities for staff development in the area of classroom computing.

### Computers in Teaching
MECC, 1984

This is an overview of the instructional uses of microcomputers. The package contains a two-disk tutorial and manual, covering such topics as learning objectives, lesson planning, classroom strategy, and types of software.

### Instructional Computing Presentations

MECC, 1981

There are two disks included in this package, containing programs to demonstrate educational computing concepts. The book contains transparencies, handouts, and lesson plans for 19 one-hour in-service presentations on topics such as school and teacher utilities, application programs, programming techniques, and instructional microcomputing.

## *Magazines*

### Classroom Computer Learning

Pitman Learning, Inc.
19 Davis Drive
Belmont, California 94002
415-592-7810

This magazine includes teacher-developed classroom activities, public domain programs, software reviews, and a pull-out poster for classroom display. Two issues per year are informative directories of educational computing resources.

### The Computing Teacher

ICCE
University of Oregon
1787 Agate Street
Eugene, Oregon 97403
503-686-4414

This magazine is put out by ICCE (International Council for Computers in Education). It contains software and book reviews, news items on projects, conferences and funding sources, and information on microcomputer technology.

### Electronic Learning

Scholastic, Inc.
730 Broadway
New York, N.Y. 10003
212-505-3000

This is a non-technical source of information on educational computing applications. There are news reports on innovative projects, new resources for educational computing, software evaluations, in-service training information, and information on instructional and administrative applications.

## *Newsletters and Bulletins*

**Apple Education News**
20525 Mariani Avenue
Cupertino, California 95014
408-996-1010

This is a free, quarterly publication of Apple Computer, Inc. It contains product descriptions, educational computing news, and feature stories about the use of Apple microcomputers in educational settings.

**Disk Network**
Big Red Apple Club
1301 N. 19th Street
Norfolk, NE 68701

This newsletter is published on a diskette by the Big Red Apple Club. It contains articles, a bulletin board, and public domain software for Apple users.

**CAI Newsletter**
Coordination Center for CAI
California State University, Fresno
Fresno, California 93740
209-294-3923

This newsletter offers information on computer-assisted instruction to educators in various different curriculum areas.

**Closing the Gap**
P.O. Box 68
Henderson, MN 56044
612-665-6573

This newsletter is aimed at handicapped microcomputer users. It covers computer applications, products, software, and hardware modifications for learners with special needs.

**CUE Newsletter**
127 O'Connor Street
Menlo Park, California 94025

This newsletter is published by the group Computer-Using Educators and deals with all aspects of educational microcomputing.

### Microcomputer Digest
201 Route 516
Old Bridge, New Jersey 08857
201-679-1877

This monthly digest is subtitled "A Resource For The Busy School Administrator." It contains summaries and exerpts from other publications, relevent to educational microcomputing. It gives information on new resources, funding sources, projects of interest, and meetings worth attending.

## *Resource Centers*

### Technology Center
Ohio State Department of Education
Room 813
65 South Front Street
Columbus, Ohio 43215
614-462-8564

This resource center provides a place for educators to preview software. It has telecommunications capability to access TechNet, interactive video, and graphics facilities. There is a large collection of computer-related audio-visual materials and two data-bases of computer resource information.

### Educational Resource Center
College of Education and Human Services
Wright State University
244 Millet Hall
Dayton, Ohio 45429
513-873-2509

This center houses a variety of software, computer related audio-visual materials, print and non-print instructional materials. Material is available for use at the center and also for distribution.

## *Software Reviews and Directories*

### TESS: The Educational Software Selector
EPIE Institute
P.O. Box 839B
Water Mill, New York 11976

The EPIE Institute is an educational, non-profit, evaluation agency associated with the Consumers' Union of the U.S. (publishers of Consumer Reports).

EPIE's publication, TESS, is updated yearly and contains in-depth information and product evaluations of over 6,500 educational software programs.

**Public Domain Consortium**
295 Mill Road
North Haven, Connecticut 06473
203-234-0130

This directory describes public domain software and is available at the cost of duplicating it.

**The Yellow Book of Computer Products for Education**
NEA Educational Computer Service
4720 Montgomery Lane
Bethesda, Maryland 20814
800-632-6327

Published by the National Education Association, this directory lists NEA teacher-certified educational and application software.

**The Best in Educational Software**
Queue Inc.
5 Chapel Hill Drive
Fairfield, Connecticut 06432
800-232-2224

This software catalog describes over 3,000 educational software programs for levels from pre-school through college. The catalog is free to educators.

## Summary

There are other resources available. As with software resources, new ones become available daily. It is necessary to read the professional journals and magazines to keep abreast of what is happening in the area of microcomputer technology for education.

# Funding

Educational microcomputing involves the purchase of costly equipment and materials. Additional money must be spent to train administrators and teachers in the effective use of this technology. Consequently, the implementation of educational microcomputing begins with finding the funds to do the job.

This section of the Handbook lists some possible sources to explore in searching for these funds.

## *Directories and Informational Resources*

**1985 Guide to Federal Funding for Education**
Education Funding Research Council
1611 North Kent Street, Suite 508
Arlington, Virginia 22209

Federal programs and funding sources are detailed in this guide, which is kept current by periodic supplements as the need arises. The guide is a large, well-researched, up-to-date source of information on funding possibilities.

**Education Funding News**
Government Information Services
1611 North Kent Street, Suite 508
Arlington, Virginia 22209

A supplement to the guide above, this weekly newsletter regularly covers funding for educational microcomputing.

**Foundation Funds for Schools, Museums and Libraries**
International Communications Industries Association
3150 Spring Street
Fairfax, Virginia 22031

Programs seeking funds for video equipment, microcomputers, and other communication's technology products may find valuable information in this new directory.

**Federal Grants and Contracts Weekly**
Capitol Publications, Inc
1300 N. 17th St.
Arlington, Virginia 22209

Every grant and education-related act sponsored by the federal government is described in this newsletter. It is published weekly and includes news about key funding agencies.

**The Grants Register**
St. Martins Press
175 Fifth Avenue
New York, New York 10010

This is a guide to a wide variety of grant sources. There are copies of this register at most public libraries.

## *U.S. Department of Education*

The United States Department of Education has sponsored numerous computer education projects through its discretionary funding programs. Programs have been sponsored through the Offices of Bilingual Education and Minority Language Affairs, Educational Research and Improvement, Elementary and Secondary Education, Vocational and Adult Education, and the National Institute of Education. Addresses of individual offices can be obtained from the following location:

**U.S. Department of Education**
400 Maryland Avenue, SW
Washington, DC 20202

A descriptive listing of the projects that have been sponsored by these funds can be found in the catalog below:

**Computer Education: A Catalog of Projects Sponsored by The U.S. Department of Education**
Office of Educational Research and Improvement
for sale by The Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

This catalog lists current projects sponsored by the U.S. Office of Education. As such, it does not provide future grant information. It does, however, list names and addresses of contact persons for each project, providing leads to individuals and offices that sponsor microcomputer projects.

## *Foundations and Other Funding Sources*

**The Foundation Center**
888 Seventh Avenue
New York, New York 10106
800-424-9836
212-975-1120

This is a national service organization funded mostly by foundations, which provides grant seekers with current information on over 20,000 active foundations in the United States. The center assists in matching program needs with matching foundation funds, by publishing and disseminating pertinent, authoritative information. There are 125 cooperating libraries which provide free access to the Foundation Center's publications. The toll-free number above provides the location of these libraries. Publications put out by the Foundation Center include:

| The Foundation Directory | National Data Book, 8th Edition |
|---|---|
| -gives full descriptions of 4,000 foundations | -lists over 20,000 active U.S. foundations. |

**National Institute of Education**
Unsolicited Proposals Program
1200 19th Street, N.W.
Washington, DC 20208

Funds for educational computing research and development projects are available at the above address.

**Apple Education Foundation**
10201 N. DeAnza
Cupertino, California 95014
408-973-2105

This foundation, sponsored by Apple Computer, Inc., runs grant cycles several times a year. Each cycle has its specific goals and guidelines, revolving around the development of educational microcomputing. For current cycle guidelines, send a postcard to "Grants Information" at the above address.

**Women's Educational Equity Act Program**
400 Maryland Avenue SW
Washington, DC 20202
202-245-2465

This project sponsors programs aimed at achieving women's equity. Microcomputer hardware and software will be accepted as a part of any proposal if its use is integral to the proposal.

### Job Training Partnership Act

The Job Training Partnership Act of 1982 establishes federal, state, and local monies to prepare economically disadvantaged and chronically unemployed people become productive members of the labor force. Proposals are submitted and funds administered in localities, through elected officials and private industry councils (PICs).

JTPA money may be used in Adult Basic Education programs to improve basic skills. Proposals have been submitted and accepted to use microcomputers for this purpose.

## *Other Sources of Funding Information*

As with other educational microcomputing resources, the key to knowing where to find the funding is in remaining current with microcomputer trends. Most computer magazines, educational microcomputing journals, and newsletters contain funding information, anouncements of grant cycles, and descriptions of already-funded microcomputer projects. A perusal of the literature on a monthly basis will bring this information to the notice of an informed educator.

Many computer stores provide bulletins and newsletters containing information about educational grants. Some stores will even assist in the writing of the proposal, since it will mean business for them if it is accepted.

The public library has numerous books, magazines, and newsletters related to funding sources and foundations. Many of the directories listed above are available through the public library, and most libraries even offer information services to help you find what you need.

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# Keeping Up With Technology

The field of microcomputer technology is a vital, ever-changing arena. New technological concepts and products become available daily, and equipment that is only a few years old is termed "obsolete."

This is an important topic among educators, whose budgetary resources are limited and whose obligations to the taxpayers are obvious. ***How do educators offer the most current benefits of educational technology to their students, in a cost-effective, realistic manner?***

Keeping up with educational technology does not necessarily require the newest and most up-to-date equipment and materials. ***A piece of microcomputer equipment is not "obsolete" until it no longer does the job you need it to do.***

Microcomputer equipment purchased today can be educationally and technologically current years from now, if the initial purchase is made with foresight and planning. Equipment purchased should be flexible and adaptable in nature. That is, there should be the option to add new technological features and enhancements to older equipment. For example, the Apple IIe microcomputer has expansion slots, to which a variety of peripherals and new educational enhancements can be added as they are developed. Other microcomputers offer similar future possibilities. In purchasing equipment, educators must seek out hardware that has these features for future adaptations.

Educators cannot possibly expect to incorporate into their programs everything new that is developed. There is simply not enough money to do that. What educators can do is to plan and purchase wisely, with an eye to future possibilities.

***Keeping up with educational technology requires being current in technological understanding.*** Educators should read microcomputer magazines and journals, attend seminars and workshops, join users' groups, and so on. Only by having a current understanding of the status of educational technology can educators hope to keep up.

## Summary

Striving to remain "current" by some definitions can be exhausting, expensive, and virtually impossible. Educators must define "current" to meet their own needs and specifications. Keeping up with educational technology means three things: planning well, maintaining a state-of-the-art understanding of current educational technology, and adapting equipment-on-hand to meet new educational microcomputing technologies.

Three concepts to keep in mind:

> ***Microcomputer equipment and materials are not obsolete until they no longer do the job you need them to do.***
>
> ***Initial microcomputer purchases should be made with an eye to their future capacity for expansion.***
>
> ***The most important concept in keeping up with technology does not involve costly equipment purchases, but an investment in time, to remain current in the understanding of new educational technologies.***

# Appendix A

# Staff Development Aids

The following materials may be used for staff development and for other program computer literacy activities. Some will have to be adapted to meet specific equipment configuration, group needs, and/or activity goals. Materials may be duplicated as handouts or used to make transparencies for group presentations.

| | |
|---|---|
| *Computer Literacy*<br>*Using Microcomputers in ABE*<br>*Microcomputers in ABE: Peripheral Benefits*<br>*ABE Staff Development* | These overlays can be used as a general introduction to ABE staff computer literacy |
| *Microcomputer Parts*<br>*Microcomputer Memory*<br>*Communication* | These sheets deal with the anatomy and operation of the microcomputer. |
| *DOS Commands*<br>*Initializing Disks: One Drive*<br>*Fun1*<br>*Fun2*<br>*Vacation*<br>*Blastoff*<br>*DOS Commands - Activity* | These aids cover the DOS operating system. Flowcharts may be used to present the basics of BASIC. The final activity reviews basic DOS commands. |
| *ProDOS User's Disk*<br>*ProDOS -> Applesoft Commands*<br>*ByTwos ByTwos.DB*<br>*Buggy*<br>*Debugged*<br>*Namer*<br>*ProDOS - Applesoft Basic Exercise* | These aids deal with the ProDOS operating system. Flowcharts can be used to teach the basics of BASIC. The final activity reviews commands. |

| | |
|---|---|
| ***Program Planning***<br>***Choosing the Hardware*** | These aids deal in a general way with microcomputer program-planning concerns. |
| ***Types of Software***<br>***CAI in ABE: Software***<br>***Integrated Software***<br>***Teacher-Developed Software***<br>***Software Evaluation Form***<br>***Software Resources*** | These aids discuss various aspects of software use. The evaluation form is specific to adult-oriented software. |
| ***Electronic Spreadsheet Activity***<br>***VISICALC Activity***<br>***Budget Planning Sheet(Completed)***<br>***Budget Planning Sheet(Incomplete)*** | VISICALC is needed to use this activity. A pre-designed template must be prepared by the workshop presenter. |
| ***Time For A New Job? (Un-edited)***<br>***Time For A New Job? (Edited)*** | This is an activity for use in teaching word-processing. |

# Computer Literacy

**Computer Literacy means the ability to use the microcomputer effectively to meet one's own personal needs.**

## For ABE Students:

--> Understanding micrcomputer terminology

--> Being familiar with the various microcomputer components and how they interact: hardware and software

--> Knowing the basic concepts of microcomputer operation: booting the system, dealing with disks, utilities . . .

--> Being aware of computer applications and how they might meet personal and/or professional needs: word-processing, data-base management, electronic spreadsheeting, etc.

## For ABE Administrators and Teachers:

--> All of the above, with a working knowledge of program management applications: database management, word-processing, accounting and program planning . . .

--> Possibly some programming or authoring skills for developing student materials and software. *Computer Literacy, however, does not mean knowing how to program the microcomputer.*

# Using Microcomputers In Adult Basic Education

- For Students and Teachers
  - Computer-Assisted Instruction
  - Computer Literacy
  - Computer-Generated Materials
- For Administrators
  - Budget/Program Planning
  - Record Keeping & Reports
  - Word-Processing

# Microcomputers in ABE: Peripheral Benefits

## For the Adult Basic Education Staff:

--> Reduced paperwork

--> More efficient organization

--> More compact records' storage

--> Noticeable savings of time

--> More impressive presentation of printed program materials

## For the Adult Basic Education Student:

--> Enhanced self-image

--> Feeling of confidence in dealing with microcomputers

--> Exposure to career/personal possibilities of microcomputing

# ABE Staff Development

Staff Devleopment needs to be approached on two levels:

## Personal Computer Literacy

Staff members need a basic level of computer literacy for themselves, before they can effectively use microcomputers with their students:

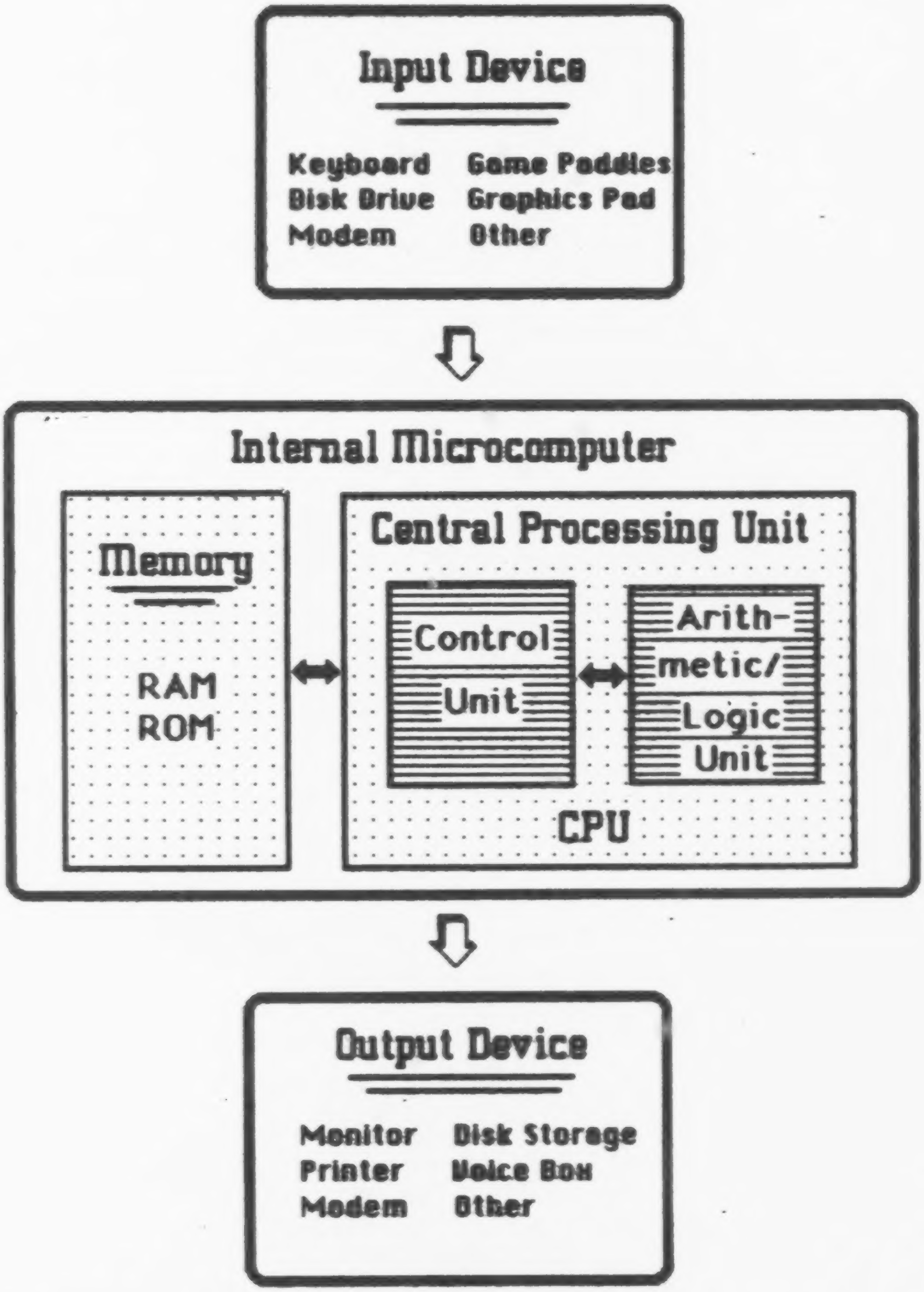
--> Anatomy of the Microcomputer
--> Communcating with the Microcomputer
--> Computer-Assisted Instruction
--> Personal/Professional Applications

## Professional Computer Literacy

Once they are personally comfortable with the potential of the microcomputer, the staff can explore ways to use the technology in their ABE classrooms.

--> Computer-Assisted Instruction
--> Student Computer Literacy
--> Computer-Generated Instructional Materials

# Microcomputer Parts



**Input Device**

Keyboard
Disk Drive
Modem
Game Paddles
Graphics Pad
Other

**Internal Microcomputer**

Memory

RAM
ROM

Central Processing Unit

Control Unit

Arithmetic/Logic Unit

CPU

**Output Device**

Monitor
Printer
Modem
Disk Storage
Voice Box
Other

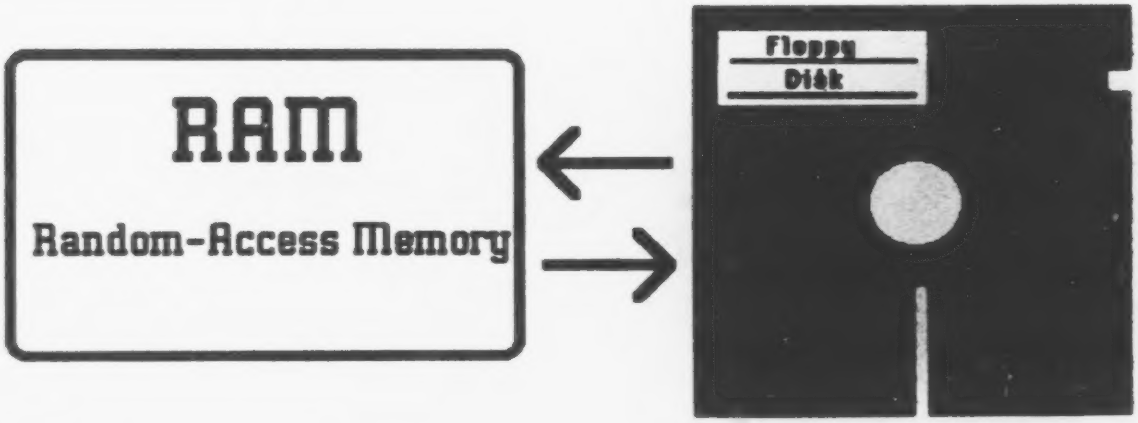
# Microcomputer Memory

There are three kinds of memory in the microcomputer:

**ROM**

Read-Only Memory

ROM = permanent memory.
-remains intact when the microcomputer is turned off.



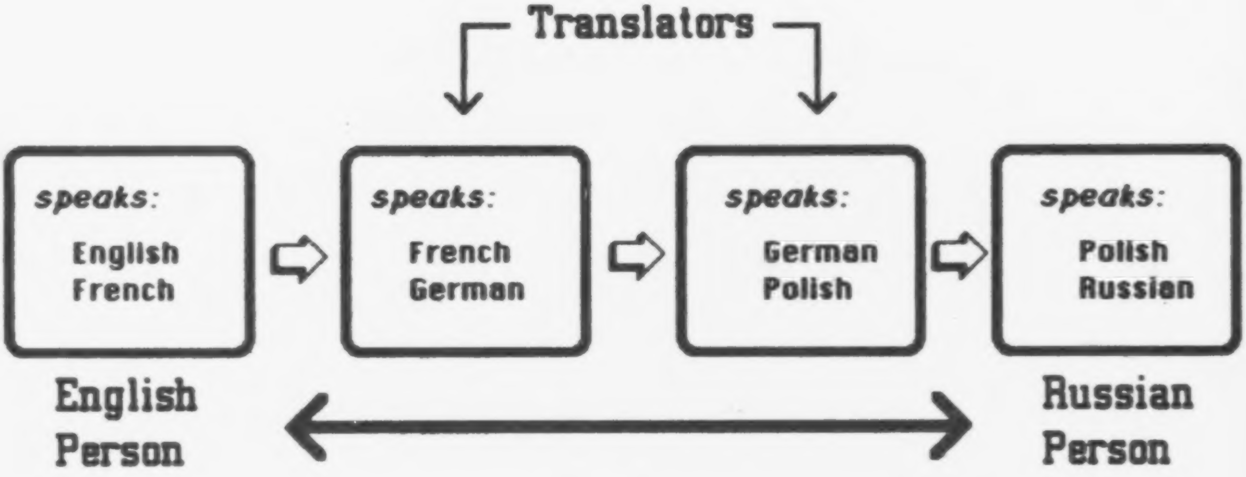
**RAM**

Random-Access Memory

RAM = temporary memory.
-disappears when the microcomputer is turned off. Information stored on floppy disk.

Floppy Disk = magnetic storage system.
-loads into RAM for program operation.

# Communication



Translators

*speaks:* English French

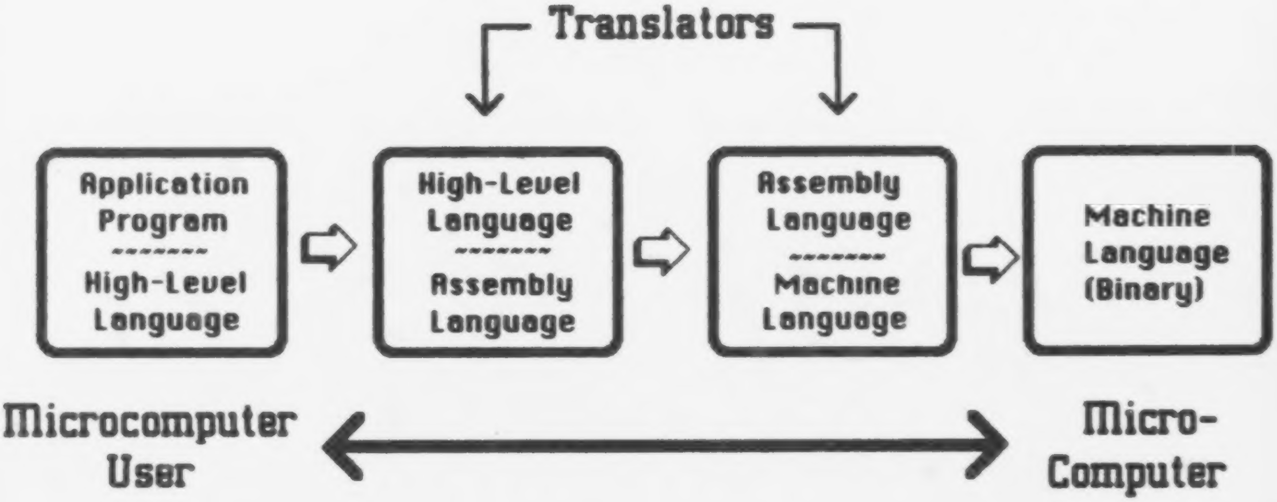
*speaks:* French German

*speaks:* German Polish

*speaks:* Polish Russian

English Person

Russian Person



Translators

Application Program
-------
High-Level Language

High-Level Language
-------
Assembly Language

Assembly Language
-------
Machine Language

Machine Language (Binary)

Microcomputer User

Micro-Computer

# DOS COMMANDS

These commands are run after the SYSTEM MASTER Disk has been booted. You may have to do some disk-swapping if you are working with only ONE drive.

LIST --> LISTS PROGRAM STATEMENTS FOR EDITING

NEW --> CLEARS MEMORY TO BEGIN A NEW PROGRAM

CATALOG --> LISTS ALL PROGRAMS ON THE DISK

SAVE SPACE SAMPLE --> SAVES A PROGRAM ON A DISK

RUN SPACE SAMPLE --> RUNS A PROGRAM FROM A DISK

DELETE SPACE SAMPLE --> ERASES PROGRAM FROM DISK

LOAD SPACE SAMPLE --> LOADS A PROGRAM IN MEMORY

LOCK SPACE SAMPLE --> LOCKS PROGRAM-NO CHANGES

UNLOCK SPACE SAMPLE --> UNLOCKS A PROGRAM

INIT SPACE HELLO --> INITIALIZES A DISK

RENAME SPACE SAMPLE , ABE --> RENAMES A FILE

# Initializing Disks - One Disk Drive

Initializing (formatting) disks involves preparing blank disks to receive and store microcomputer information.

Step One - **Boot the SYSTEM MASTER disk.**

Step Two - **Remove the SYSTEM MASTER from Drive One, and insert the blank disk.**

Step Three - **Type [NEW] and press [RETURN].**

Step Four - **Type an identifying program, like:**

```
10 PRINT "THIS HELLO PROGRAM"
20 PRINT "WAS CREATED BY"
30 PRINT "(your name)"
40 PRINT "ON (today's date)."
50 END
```

Step Five - **Test-Run the Program by typing [RUN].**

Step Six - **If the Program runs as it was typed, type [INIT] [HELLO].**

Step Seven - **Test your disk to see if the HELLO Program has been saved, by typing [CATALOG].**

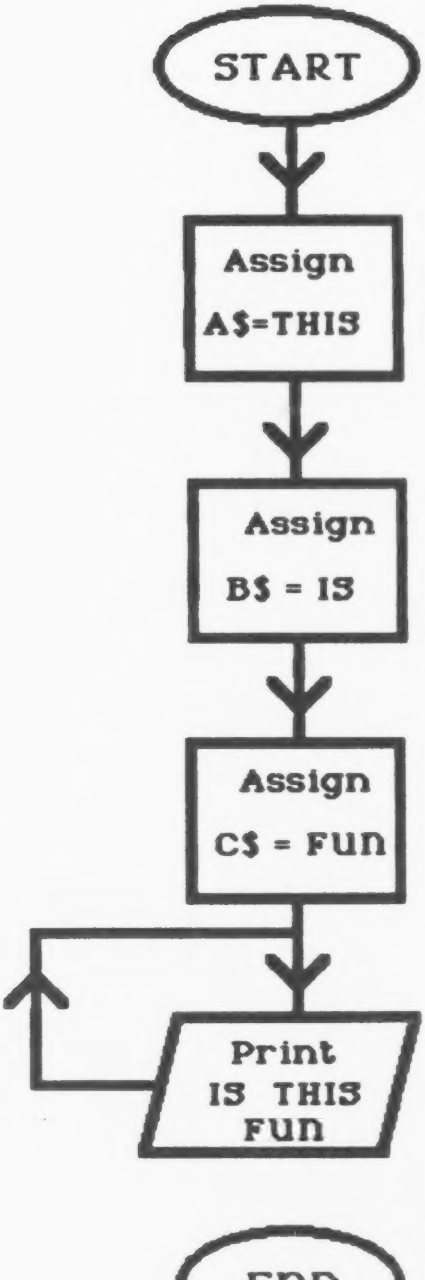
**The catalog displayed by the computer should read:**

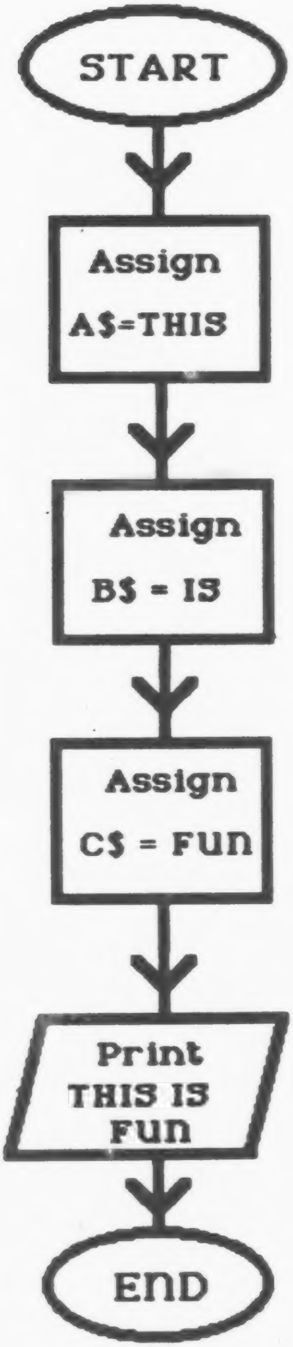
```
DISK VOLUME 254
A 002 HELLO
```

Step Eight - **Remove the disk from the drive and carefully mark it as initialized.**

# FUN 1

```
10 LET A$="THIS"
20 LET B$="IS"
30 LET C$="FUN"
40 PRINT B$,A$,C$
50 GOTO 40
60 END
```


START
Assign
A$=THIS
Assign
B$ = IS
Assign
C$ = FUN
Print
IS THIS
FUN
END

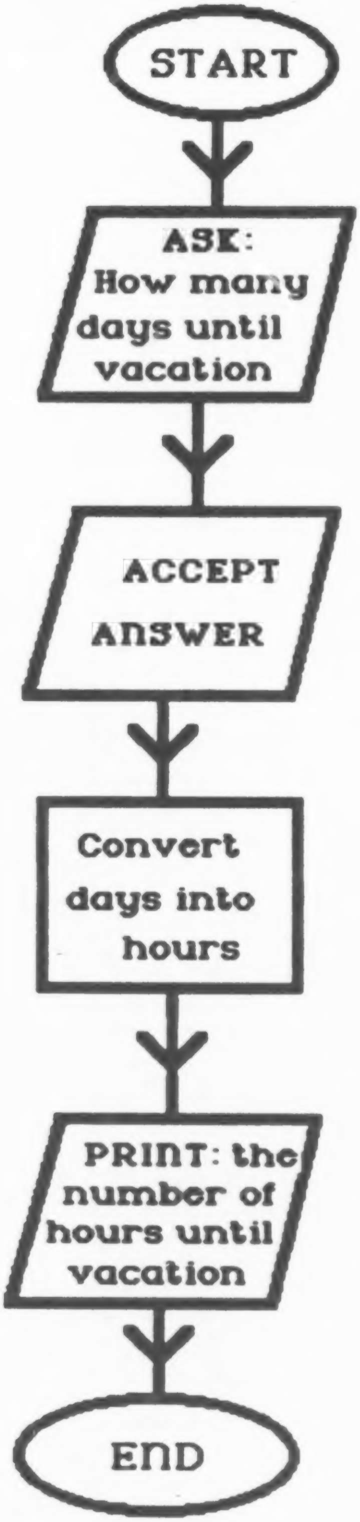

START
Assign
A$=THIS
Assign
B$ = IS
Assign
C$ = Fun
Print
THIS IS
Fun
END

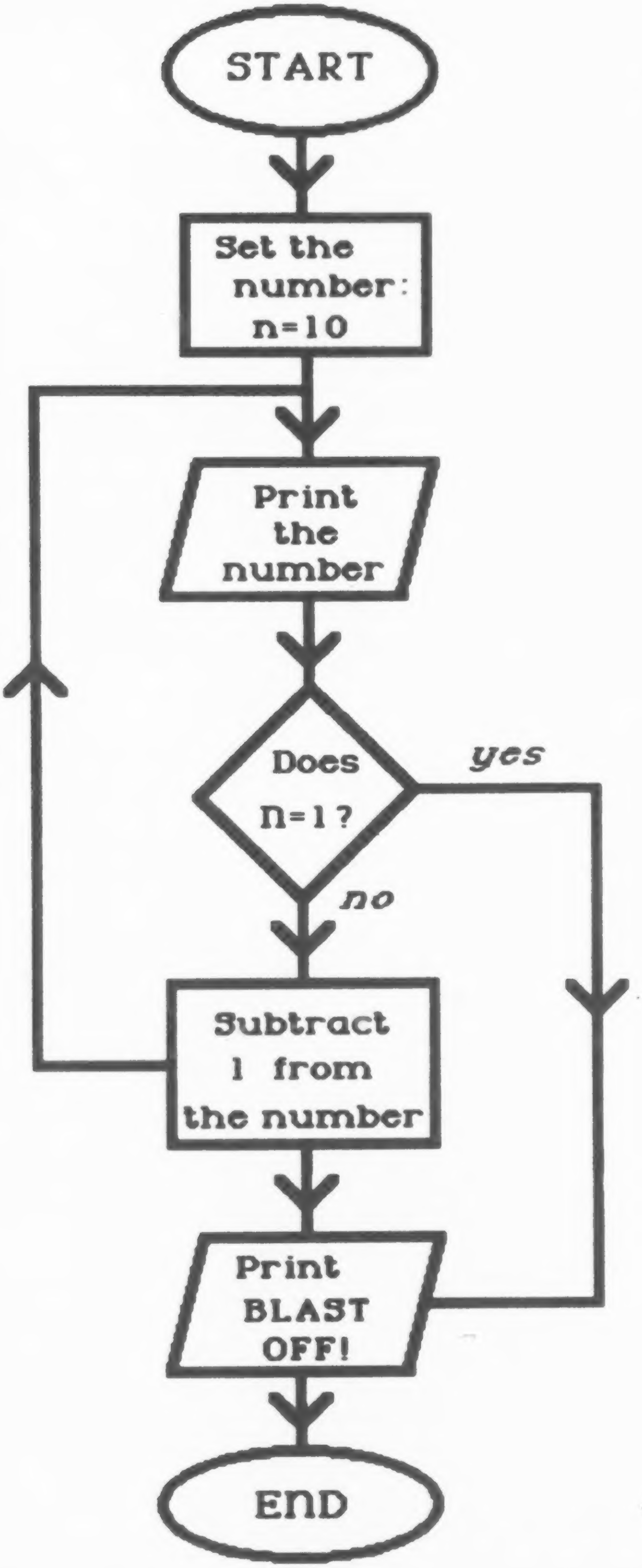
# FUN2

```
10 LET A$="THIS"
20 LET B$="IS"
30 LET C$="FUN"
40 PRINT A$,B$,C$
60 END
```

# VACATION

```
10 PRINT  "HOW MANY DAYS UNTIL
     YOUR VACATION";

20 INPUT  D

30 LET  H=D*24

40 PRINT H  "IS THE NUMBER OF
     HOURS UNTIL VACATION."

50 END
```


START
ASK: How many days until vacation
ACCEPT ANSWER
Convert days into hours
PRINT: the number of hours until vacation
END


START
Set the number: n=10
Print the number
Does n=1?
yes
no
Subtract 1 from the number
Print BLAST OFF!
END

# BLASTOFF

```
10 LET N=10

20 PRINT N

30 IF N=1 THEN GOTO 60

40 LET N=N-1

50 GOTO 20

60 PRINT "BLAST OFF!"

70 END
```

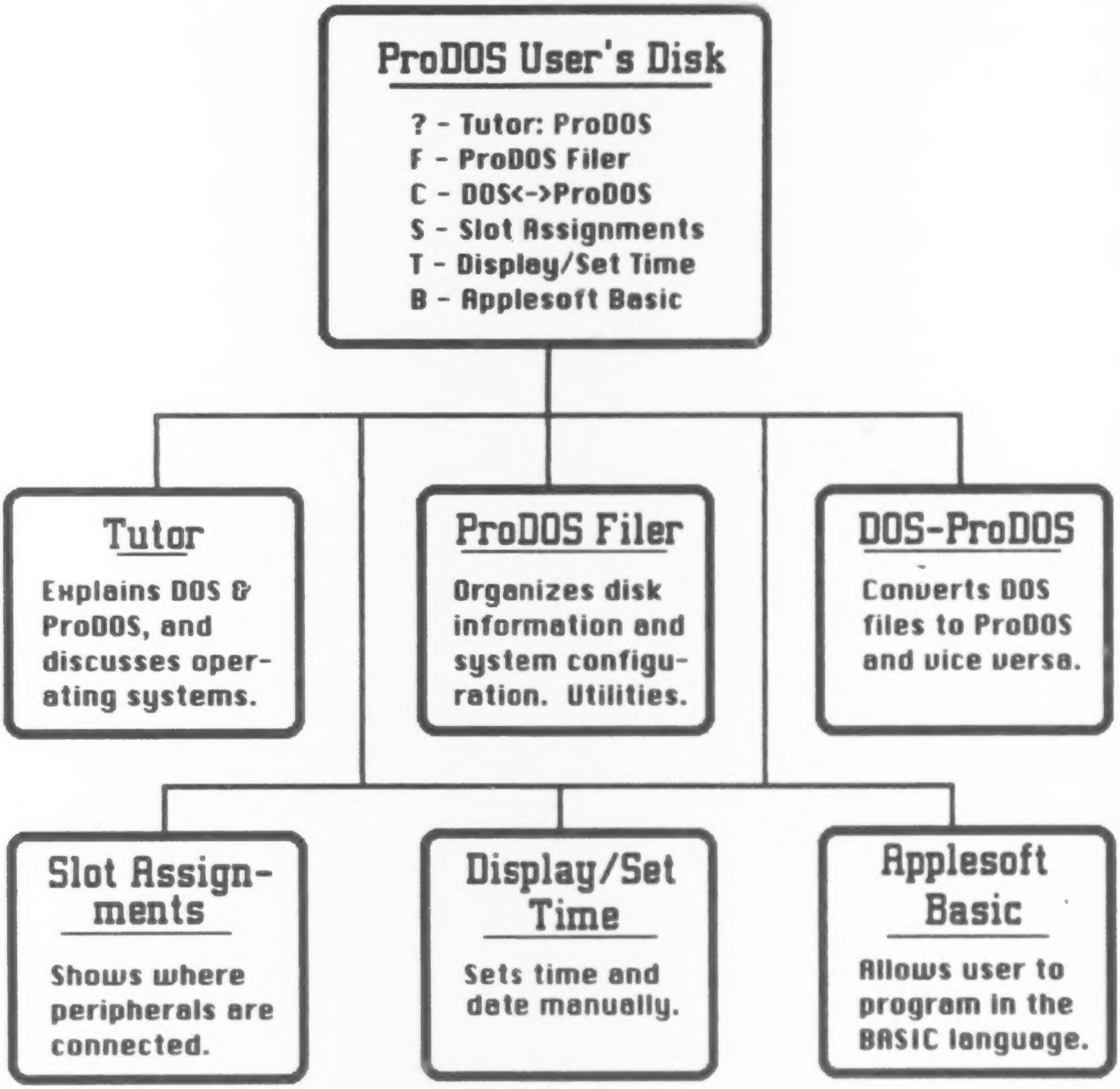
# DOS COMMANDS - Activity

Perform the following operations, using the necessary DOS Commands. *Do not CATALOG until the end.* At the beginning of the exercise, the CATALOG on your disk should read:

```
HELLO
VACATION
FUN1
FUN2
BLASTOFF
```

1. Load the file **BLASTOFF** from your disk, and then save it as **GOING**.
2. Rename the file **GOING,** calling it **AWAY**.
3. Save the file currently in memory as **GONE**.
4. Lock the file **BLASTOFF**.
5. Load the file **FUN1** into memory. Save it as **TROUBLE**.
6. Delete the file **AWAY** from your disk.
7. Change the name of **GONE** to **HERE**.
8. Save **EVERYWHERE**.
9. Load the file **VACATION**; save it as **ANYTIME**.
10. Lock the files **FUN2** and **TROUBLE**.
11. Delete the file **HERE**.
12. Unlock **TROUBLE** and lock **VACATION**.
13. Delete **TROUBLE** and **EVERYWHERE**.
14. Lock **FUN1**.
15. Delete the file **ANYTIME,** and catalog your disk.

# ProDOS User's Disk



**ProDOS User's Disk**

? - Tutor: ProDOS
F - ProDOS Filer
C - DOS<->ProDOS
S - Slot Assignments
T - Display/Set Time
B - Applesoft Basic

**Tutor**

Explains DOS & ProDOS, and discusses operating systems.

**ProDOS Filer**

Organizes disk information and system configuration. Utilities.

**DOS-ProDOS**

Converts DOS files to ProDOS and vice versa.

**Slot Assignments**

Shows where peripherals are connected.

**Display/Set Time**

Sets time and date manually.

**Applesoft Basic**

Allows user to program in the BASIC language.

# Pro-DOS -> Applesoft Commands

These commands are run after entering Applesoft Basic, from the Main Menu of the Pro-DOS User's Disk.

HOME --> CLEARS THE SCREEN AND SENDS THE CURSOR TO THE UPPER LEFT CORNER OF THE SCREEN

LIST --> LISTS PROGRAM STATEMENTS FOR EDITING

NEW --> CLEARS MEMORY TO BEGIN A NEW PROGRAM

CATALOG --> LISTS ALL PROGRAMS ON THE DISK

SAVE SPACE SAMPLE --> SAVES A PROGRAM ON A DISK

RUN SPACE SAMPLE --> RUNS A PROGRAM FROM A DISK

DELETE SPACE SAMPLE --> ERASES PROGRAM FROM DISK

LOAD SPACE SAMPLE --> LOADS A PROGRAM IN MEMORY

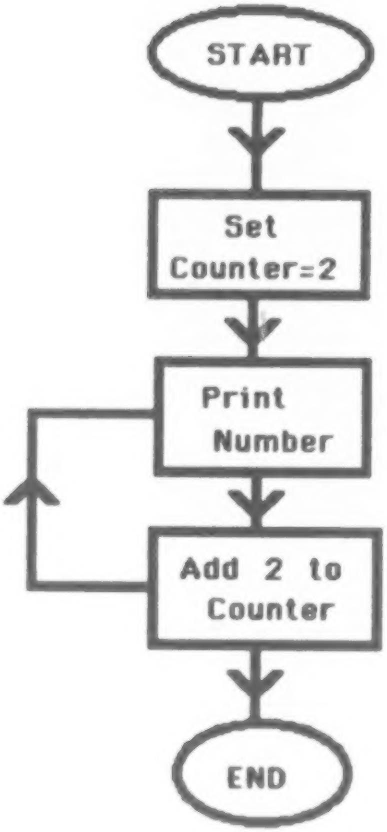
LOCK SPACE SAMPLE --> LOCKS PROGRAM-NO CHANGES

UNLOCK SPACE SAMPLE --> UNLOCKS A PROGRAM

RENAME SPACE SAMPLE , ABE --> RENAMES A FILE

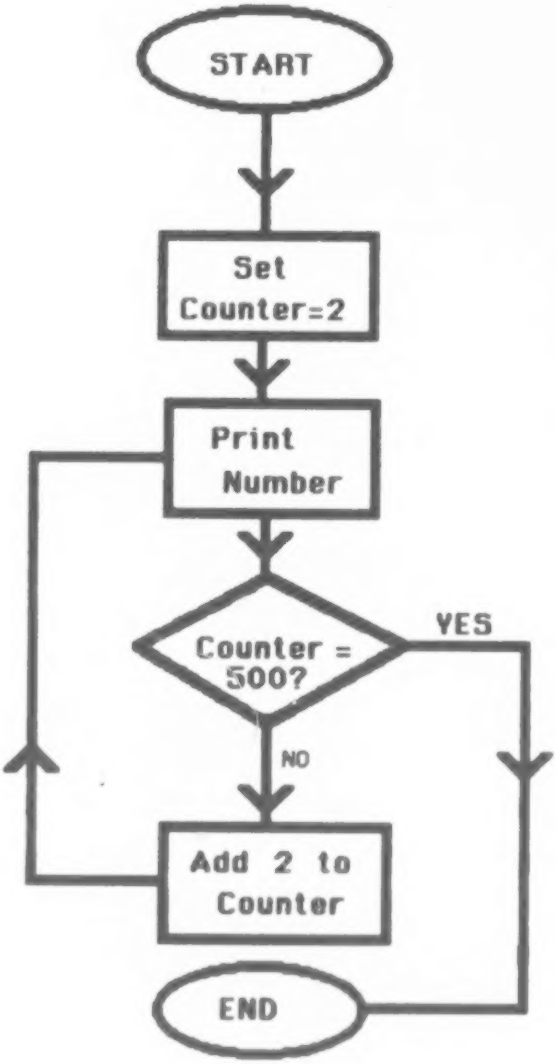
ANY COMMAND , D2 --> CHANGES THE DRIVE TO DRIVE 2. ALL COMMANDS WILL OPERATE ON DRIVE 2 UNTIL DRIVE 1 IS RE-SELECTED WITH D1

## BYTWOS


START
Set
Counter=2
Print
Number
Add 2 to
Counter
END

```
10 LET S=2
20 PRINT S,
30 LET S=S+2
40 GOTO 20
50 END
```

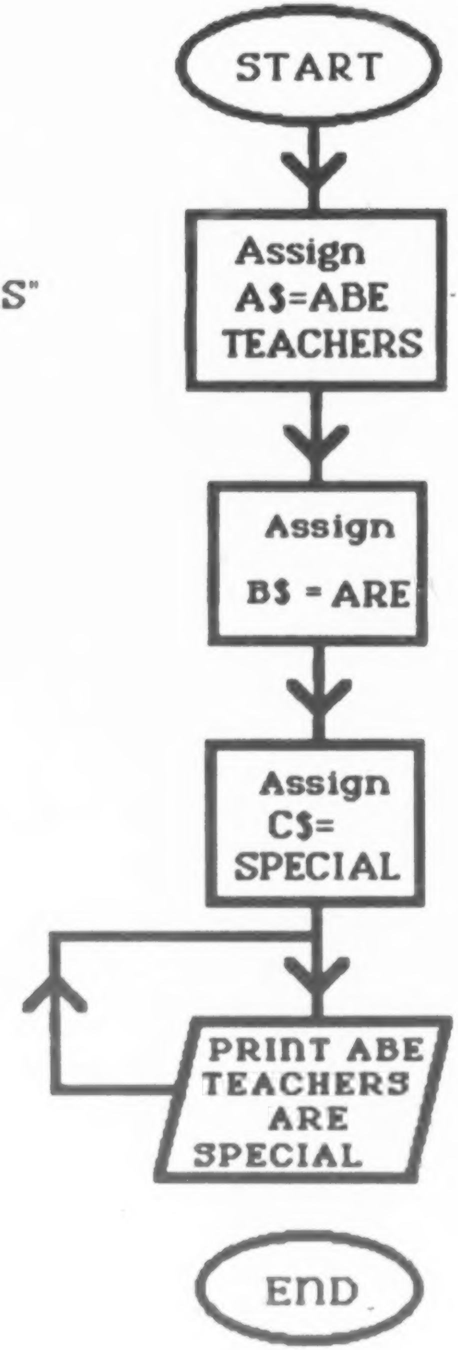
## BY TWOS.DB


START
Set
Counter=2
Print
Number
Counter =
500?
YES
NO
Add 2 to
Counter
END

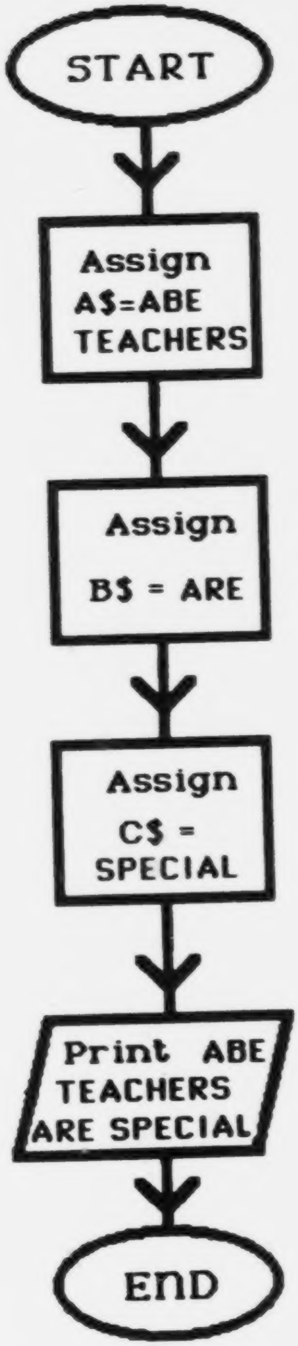
```
10 LET S=2
20 PRINT S
30 LET S=S+2
35 IF S=502 THEN GOTO 50
40 GOTO 20
50 END
```

# Buggy

```
10  LET A$="ABE TEACHERS"
20  LET B$=" ARE"
30  LET C$=" SPECIAL"
40  PRINT  A$,B$,C$
50  GOTO 40
60  END
```

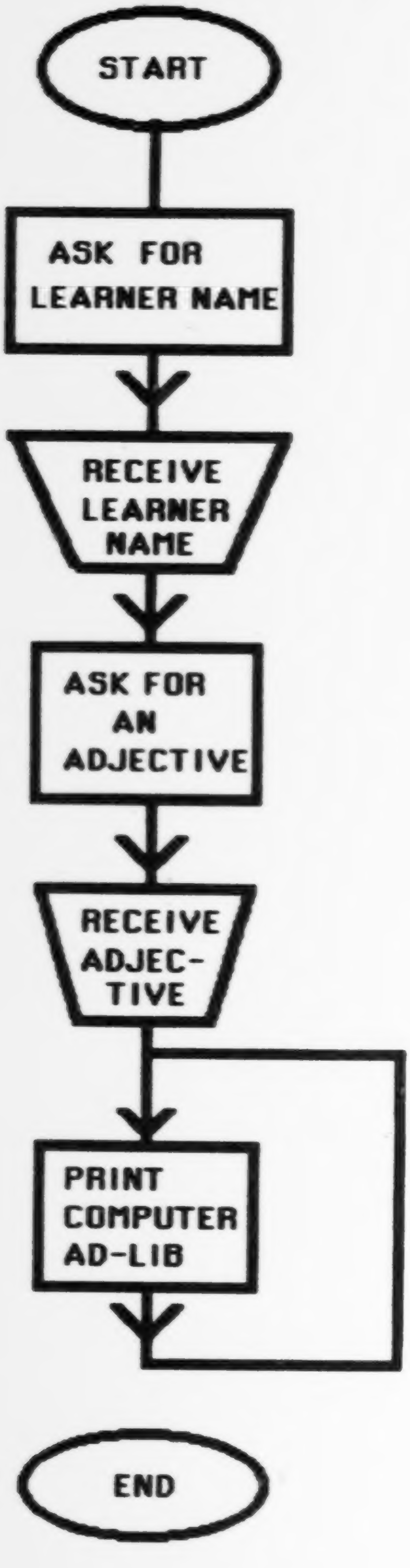

START
Assign A$=ABE TEACHERS
Assign B$ = ARE
Assign C$= SPECIAL
PRINT ABE TEACHERS ARE SPECIAL
END

There is a bug in this program. The bug causes an "infinite loop." To stop the runaway program, type Control-C. Debug the program and rerun it.


START
Assign
A$=ABE
TEACHERS
Assign
B$ = ARE
Assign
C$ =
SPECIAL
Print ABE
TEACHERS
ARE SPECIAL
END

# Debugged

```
10 LET A$= "ABE TEACHERS"
20 LET B$= "ARE"
30 LET C$= "SPECIAL"
40 PRINT A$,B$,C$
60 END
```


START
ASK FOR LEARNER NAME
RECEIVE LEARNER NAME
ASK FOR AN ADJECTIVE
RECEIVE ADJEC-TIVE
PRINT COMPUTER AD-LIB
END

# NAMER

PROGRAM

```
 5 PRINT
10 PRINT "WHAT IS YOUR NAME?"
20 PRINT
30 INPUT N$
35 PRINT
40 PRINT "TYPE AN ADJECTIVE."
50 PRINT
60 INPUT A$
70 PRINT N$;" IS ";A$;".";
80 GOTO 70
90 END
```

To get rid of the infinite loop, remove line # 80 from the program.

Then attach the [END] symbol to the end of the flowchart, erasing the loop lines.

# ProDOS - Applesoft Basic Exercise

Perform the following operations, using the necessary Applesoft BASIC commands. Do not catalog your disk until the end of the exercise. At the beginning of the exercise, the CATALOG of your disk should read:

```
BUGGY
DEBUGGED
BYTWOS
BYTWOS.DB
NAMER
```

1. Load the file NAMER from your disk, and then save it as GOING.

2. Rename the file GOING, calling it AWAY.

3. Save the file currently in memory as GONE.

4. Lock the file NAMER.

5. Load the file BYTWOS into memory. Save it as TROUBLE.

6. Delete the file AWAY from your disk.

7. Change the name of the file GONE to HERE.

8. Save EVERYWHERE.

9. Load the file DEBUGGED; save it as ANYTIME.

10. Lock the files BYTWOS.DB and TROUBLE.

11. Delete the file HERE.

12. Unlock TROUBLE and lock DEBUGGED.

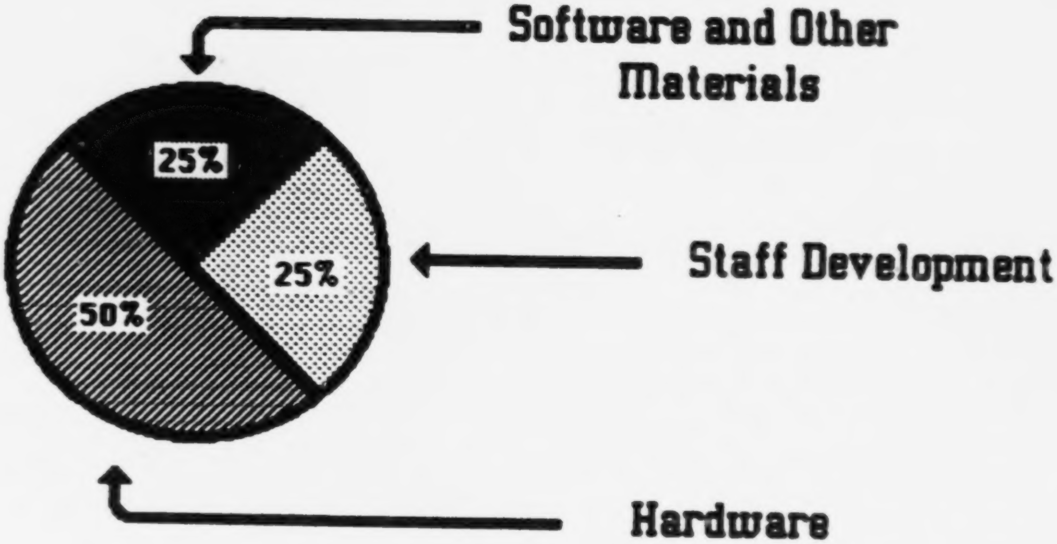
13. Delete TROUBLE and EVERYWHERE.

14. Lock BYTWOS and BUGGY.

15. Delete the file ANYTIME, and catalog your disk.

# Program Planning

Planning an ABE Microcomputer Program should include three areas of consideration: hardware, software and materials, and staff development.



The percentages of the total allotment will vary, depending on specific ABE Program variables.

Some provision should be made, however, for each topic of consideration.

# Choosing the Hardware

## Key Considerations

--> program needs
--> student profile/curriculum
--> financial considerations

## Hardware Components

### Central Processing Unit (CPU)

### Disk Drives

### Monitors

--> Color Monitors
--> Two-Tone Monitors
--> T.V. Monitors

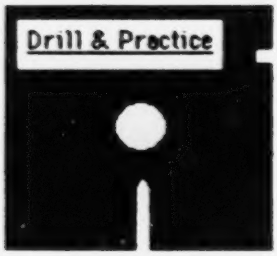
### Printers

--> Daisy Wheel Printers
--> Dot-Matrix Printers
--> Laser Printers

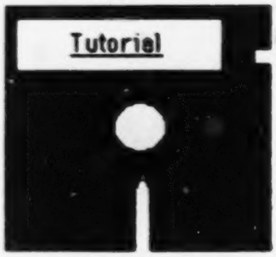
### Other Peripherals

--> 80-Column Card
--> Extended Memory Card
--> CP/M Module or Circuit Card
--> Modem
--> Graphics Pad
--> Game Paddles
--> Digitizers
--> Voice Synthesizers
--> Others

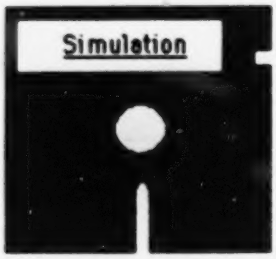
# Types of Software


Drill & Practice

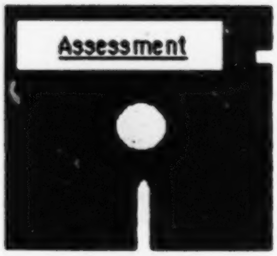
Reinforcement and remediation through repetitive drill.



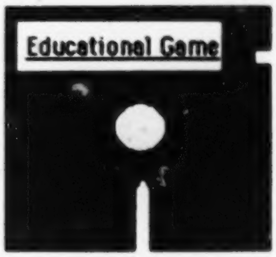
Teaches a concept with words and graphics.


Simulation

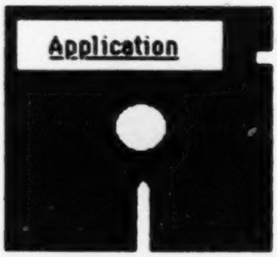
Presents a situation beyond the range of the normal classroom.


Assessment

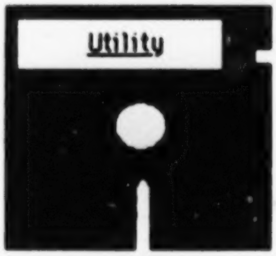
Assesses the student's current status in the topic area.


Educational Game

Teaches and/or drills a concept using a game format.


Application

Program management tools: word-processing, data-base management, electronic spreadsheet...



Work tool used to do "housekeeping" chores, and perform job more effectively.

# Computer-Assisted Instruction (CAI) in Adult Basic Education: Types of Software

**Tutorial**: Teach new concepts
Individualize instruction: remediation, enrichment
Provide immediate reinforcement

**Drill & Practice**: Reinforce concepts previously taught
Individualize instruction: remediation, enrichment
Randomly select practice exercises
Provide mmediate reinforcement

**Simulation**: Model an experiment or real world situation
Compress years into minutes
Test hypotheses
Expand range of experiences

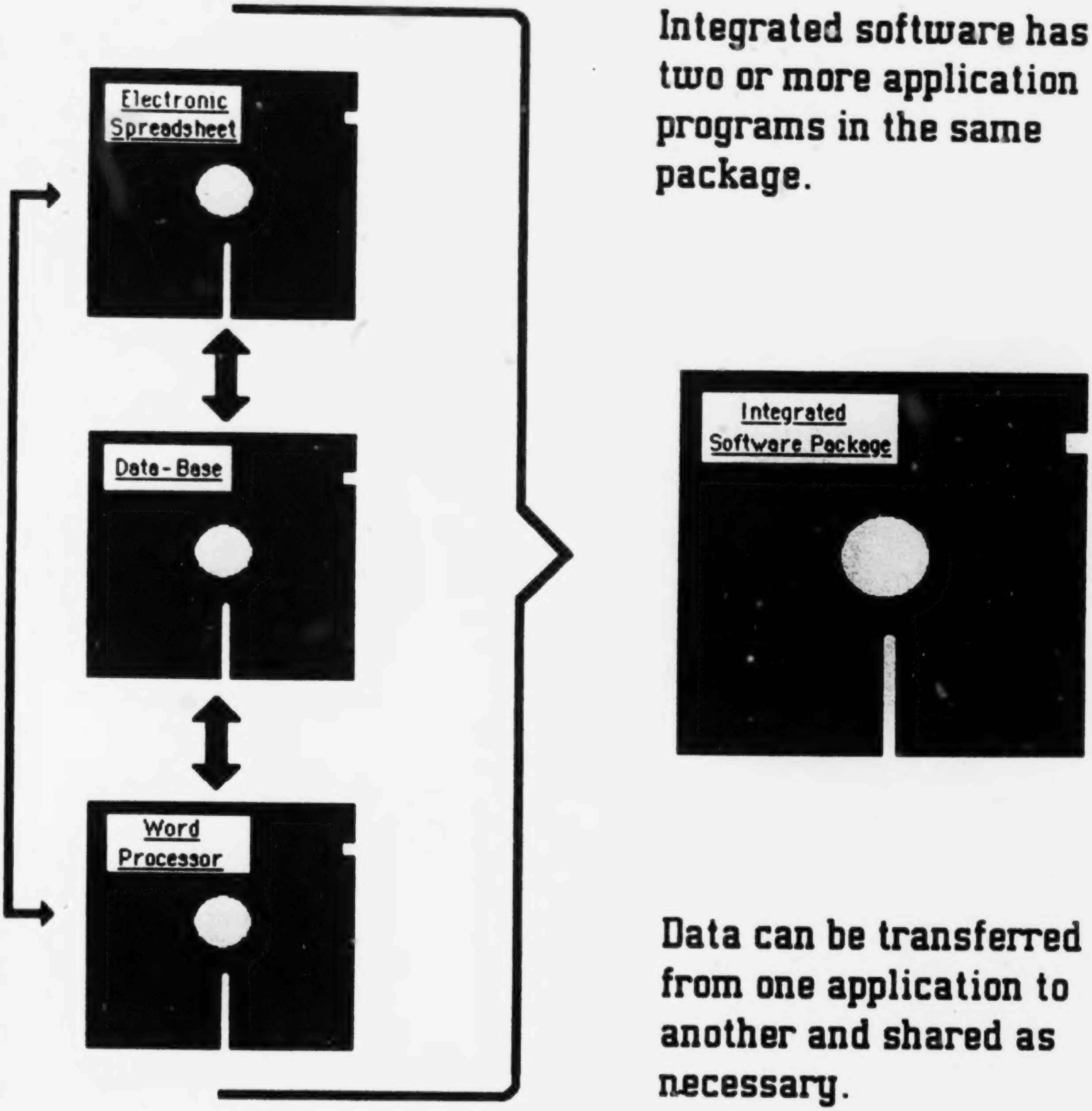
**Educational Game**: Present basic facts in new ways
Develop logical guessing
Motivate learning

**Assessment**: Diagnose problem areas
Test levels of improvement
Determine current status

**Application Program**: Perform management tasks
Present computer literacy concepts

**Utility Program**: Perform organizational tasks
Produce program materials
Perform routine, time-consuming jobs

# Integrated Software


Electronic Spreadsheet
Data-Base
Word Processor
Integrated Software Package

Integrated software has two or more application programs in the same package.

Data can be transferred from one application to another and shared as necessary.

# Teacher-Developed Software

**Programming Language**

- --> BASIC
- --> Pascal
- --> Assembly
- --> Other

A systemized set of syntactical instructions that control the operation of the computer. Strict adherence to syntax is required. Flexible, but time-consuming and not easy to lear

**Authoring System**

- --> PILOT
- --> SuperPilot
- --> CAIWARE
- --> Other

System whereby teachers can create interactive instructional programs with color graphics, sound effects, student record-keeping procedures, and more. No prior programming knowledge is needed.

**Mini-Authoring System**

- --> Master Spell
- --> Create Test
- --> Other

Provides a very structured format around which the teacher can create specific curricular lessons. Limited, but easy and effective.

**Teacher Utility**

- --> Posters & Puzzles
- --> Computer-Generated Materials
- --> Pixit
- --> Other

Provides limited, specific functions that can be used to enhance teacher presentations, develop simple materials, and provide student handouts.

# Software Evaluation Form

Program Title ____________________________________

Publisher ____________________________________

Subject ____________________  Adult-Oriented ____ yes

____ no

Level

____0-3

____4-6

____7 +

Estimated Time Needed for Use ____________________

## Type of Software

- ____Tutorial
- ____Drill & Practice
- ____Simulation
- ____Assessment
- ____Game
- ____Application
- ____Utility

## Curriculum Use

- ____ABE
- ____GED
- ____HSC
- ____APL
- ____Computer Literacy
- ____Staff

## Presentation

*( Y or N )*

- ____Clear Directions
- ____Interactive
- ____Menu-Driven
- ____Student Progress Recorded
- ____Controllable Level of Difficulty

## Comments/Description

# Software Resources

The key to successful educational microcomputing is to develop a large library of relevant software, while keeping overall costs as low as possible.

## Commercial Software

*(copyrighted)*

## MECC Software

*(copyrighted)*

## Free/Almost Free Software

*(Public Domain)*

--> User's Groups, Clubs, Consortiums

--> Specially Funded Groups, Projects

--> Software Exchanges

--> Software Libraries

--> Electronic Bulletin Boards

--> Magazines, Other Printed Materials

--> Teacher-Developed Software

# Electronic Spreadsheet Activity

Utilizing the calculating strength of the electronic spreadsheet, work out a budget for this scenario:

*No pencils or paper allowed.*

Location: Local Community Agency
Thistown, U.S.A.

Space Allotment: Unlimited Space. All classrooms located in the same area of the building

Budget Allotment: $ 148,000.00

Projected Student Enrollment: 90 - 100 enrolled
Daily attendance: 80 - 85%

Program Schedule: All students to attend both morning & afternoon, 5 days a week

Educational Range: Non-Readers through GED

Starting Point: No books or materials
No furniture or equipment
Lots of empty space

Personnel: May be employed full or part-time

# VISICALC Activity

Step One: Boot **VISICALC**. Remove the **VISICALC** Disk from Drive One, and insert the **TEMPLATE** Disk.

Step Two: Type /SL. Then, press the --> Key until you see *NT PLANNER* displayed. Press RETURN. Wait for the computer to load this template.

Step Three: Type /CY to clear memory.

Step Four: Type /SL. Then, press the --> key twice, until you see *ABE PLANNER* displayed. Press RETURN.

## Miscellaneous Information

| | |
|---|---|
| /CY | Clears memory for a new template to be loaded. |
| /SL | Loads a template into memory. |
| /SS | Saves a template back to the diskette. |
| /P | Prints a template |
| /B | Erases or blanks the contents of a cell. |
| > | (Shift and > at the same time) Sends the cursor to the coordinates requested. |

### Scrolling:

| | |
|---|---|
| --> | Moves the cursor to the RIGHT. Hit the spacebar and this arrow key moves the cursor DOWN. |
| <-- | Moves the cursor to the LEFT. Hit the spacebar and this arrow key moves the cursor UP. |

ESC: Backs up and erases on the edit line before entry of information into a cell.

```
ABE LEARNING CENTER            BUDGET PLANNING SHEET
THISTOWN, U.S.A.               BUDGET ALLOTMENT ->     148000.00

==================================================================
CATEGORY            COST          # OF        LINE      CATEGORY
 -ITEM            PER ITEM        ITEMS       TOTAL       TOTAL
==================================================================
PERSONNEL:
   TEACHER        26000.00        3.00     78000.00
   AIDE           14000.00        0.50      7000.00
    RETIREMT          0.13       --%--     11050.00
    WK. COMP          0.01       --%--       850.00
    MEDICAL           0.06       --%--      5100.00
    LIFE INS          0.19       --%--     16150.00
TOTAL-> ..........................................    118150.00

FURNITURE:
   TABLE             75.00           9       675.00
   CHAIR             25.00          50      1250.00
   CHALKBRD          70.00           3       210.00
   BULTN BD         100.00           3       300.00
   FILE CAB         200.00           3       600.00
   TCHR DESK        200.00           3       600.00
   STU DESK          75.00          35      2625.00
   CLOCK             25.00           3        75.00
   BOOKCASE         150.00           3       450.00
   CARREL-1         400.00           4      1600.00
   CARREL-4        1300.00           0         0.00
   STRG CAB         250.00           3       750.00
TOTAL-> ..........................................      9135.00

EQUIPMENT:
   TYPEWRITR        800.00           1       800.00
   DUPLICATR        400.00           1       400.00
   XEROX RTL       3500.00           0         0.00
   MOVIE PRJ        500.00           1       500.00
   CONTR RDR        400.00           6      2400.00
   FS/C PROJ        450.00           1       450.00
   SCREEN           100.00           1       100.00
   AV CART          250.00           1       250.00
   RECORDER         100.00           3       300.00
   COMPUTER        1300.00           4      5200.00
TOTAL-> ..........................................     10400.00

INSTRUCTIONAL SUPPLIES:
TOTAL-> ..........................................      7500.00

OFFICE SUPPLIES:
TOTAL-> ..........................................      2815.00
                                                   ------------
-----------GRAND   TOTAL   PROJECT   BUDGET ->        148000.00

-----------AMOUNT LEFT TO SPEND ->  -> -> -> ->            0.00
```

```
ABE LEARNING CENTER          BUDGET PLANNING SHEET
THISTOWN, U.S.A.             BUDGET ALLOTMENT ->      148000.00

================================================================
CATEGORY          COST          # OF        LINE      CATEGORY
 -ITEM          PER ITEM        ITEMS       TOTAL       TOTAL
================================================================
PERSONNEL:
   TEACHER      26000.00        0.00        0.00
   AIDE         14000.00        0.00        0.00
    RETIREMT        0.13       --%--        0.00
    WK. COMP        0.01       --%--        0.00
    MEDICAL         0.06       --%--        0.00
    LIFE INS        0.01       --%--        0.00
 TOTAL-> ........................................          0.00

FURNITURE:
   TABLE           75.00           0        0.00
   CHAIR           25.00           0        0.00
   CHALKBRD        70.00           0        0.00
   BULTN BD       100.00           0        0.00
   FILE CAB       200.00           0        0.00
   TCHR DESK      200.00           0        0.00
   STU DESK        75.00           0        0.00
   CLOCK           25.00           0        0.00
   BOOKCASE       150.00           0        0.00
   CARREL-1       400.00           0        0.00
   CARREL-4      1300.00           0        0.00
   STRG CAB       250.00           0        0.00
 TOTAL-> ........................................          0.00

EQUIPMENT:
   TYPEWRITR      800.00           0        0.00
   DUPLICATR      400.00           0        0.00
   XEROX RTL     3500.00           0        0.00
   MOVIE PRJ      500.00           0        0.00
   CONTR RDR      400.00           0        0.00
   FS/C PROJ      450.00           0        0.00
   SCREEN         100.00           0        0.00
   AV CART        250.00           0        0.00
   RECORDER       100.00           0        0.00
   COMPUTER      1300.00           0        0.00
 TOTAL-> ........................................          0.00

 INSTRUCTIONAL SUPPLIES:
 TOTAL-> .,......................................          0.00

 OFFICE SUPPLIES:
 TOTAL-> ........................................          0.00
                                                     ------------

 -----------GRAND   TOTAL   PROJECT   BUDGET  ->           0.00

 -----------AMOUNT LEFT TO SPEND ->  -> -> -> ->      148000.00
```

# Time For A New Job?

Do you sometimes wonder why you choose two become an ABE teacher? I can tell by your furled brows that you, too, have asked yourselves that question.

After a week like the passed one, I may want two find a new vacation. The reports you may have heard are more than just viscous roomers. The first crisis was that I lost my record book that contained the names and a dress says of all my students. The book was marked in bold letters: "Proper tea of Jeannie Jones." I was as mad as a pet wren.

Plans for our class party aren't going well. There are too many working students on that project. They want two have awards, refreshments, music, entertainment, and games. When Nick demonstrated his new dance, he was all thumbs and had two feet left. But the group gave him a sound of applause.

My teaching doesn't seem two be going any better. Sue reported that she has learned about "the blue bonnet plague by reading hysterical novels." Joel has been acting very mist eerie us lately. He claims two be an expert in math and fine ants, but he doesn't even no his multiplication facts.

# Time For A New Job?

Do you sometimes wonder why you cho~~o~~se ~~two~~ to become an ABE teacher? I can tell by your ~~furled~~ furrowed brows that you, too, have asked yourselves that question.

After a week like the pas~~sed~~t one, I may want ~~two~~ to find a new v~~a~~ocation. The reports you may have heard are more than just vi~~sc~~cious r~~oome~~umors. The first crisis was that I lost my record book that contained the names and a~~dress says~~ddresses of all my students. The book was marked in bold letters. "Proper~~tee~~ty of Jeannie Jones." ~~I was as mad as a pet wren.~~

Plans for our class party aren't going well. There are too many working students on that project. They want ~~two~~ to have awards, refreshments, music, entertainment, and games. ~~When Nick demonstrated his new dance, he was all thumbs and had two feet left. But the group gave him a sound of applause.~~

My teaching doesn't seem ~~two~~ to be going any better. Sue reported that she has learned about "the blue bonnet plague by reading hysterical novels." Joel has been acting very ~~mist eerie us~~ mysteriously lately. He claims ~~two~~ to be an expert in math and fin~~e ants~~ance, but he doesn't even ~~no~~ know his multiplication facts.

# Appendix B

# Glossary

**APL** - Adult Practical Literacy (basic coping skills in the areas of government and law, health, occupational knowledge, community resources, and consumer economics).

**application program** - computer program used for a specific task or application, such as word-processing, database management, or electronic spreadsheeting.

**arithmetic-logic unit** - the part of the CPU that calculates and makes mathematical evaluations.

**ASCII** - American Standard Code for Information Interchange: the standard computer code in which the numbers 0 - 127 stand for text characters.

**authoring language** - a structured system used to write microcomputer programs.

**BASIC** - Beginners' All-purpose Symbolic Instruction Code: a high-level programming language often used with microcomputers.

**binary number system** - a number system using only two digits (characters) - 0 and 1.

**bit** - a single binary digit: either 0 or 1: the smallest unit in the binary system.

**boot** - to start the microcomputer system.

**bug** - an error or mistake in a computer program.

**byte** - 8 bits: represents one letter or number to the computer.

**CAI** - computer-assisted instruction

**catalog** - a directory or list of all files stored on a disk.

**chip** - a tiny piece of silicon containing integrated circuits to run the microcomputer.

**computer** - a machine designed to accept, store, process, and give out information.

**computer-generated materials** - instructional materials and aids produced on the microcomputer.

**control unit** - part of the CPU that directs the flow of data through the microcomputer.

**CPU** - Central Processing Unit: the "brain" of the microcomputer which consists of the arithmetic-logic unit, the control unit, and the primary storage (ram & rom).

**cursor** - the marker, usually a flashing square of light, on the computer screen which shows where the next keystroke will appear.

**daisy-wheel printer** - an impact printer which uses a printing wheel similar to those in electronic typewriters: prints one whole character at a time: sometimes referred to as a "letter-quality" printer.

**data** - unprocessed facts used as microcomputer input.

**data base** - collection of information organized in a form that can be processed by the computer.

**data base management program** - a software application program that structures, maintains and provides access to a data base.

**data disk** - a floppy disk containing the data that is to be used or processed by a computer program.

**debug** - to remove mistakes from a computer program.

**disk drive** - input/output device that reads from and writes on floppy disks.

**DOS** - Disk Operating System.

**dot matrix printer** - prints letters as patterns of dots at selected positions on a grid.

**download** - to transfer data from one computer to another

**drill & practice** - a type of CAI software that reinforces skills already learned through intensive drill and repitition.

**80-column card** - a printed circuit card that expands the video display from 40 to 80 columns.

**electronic bulletin board** - a database/information service which can be accessed by means of a telephone hook-up and modem.

**electronic spreadsheet** - a columnar spreadsheet on the microcomputer for use in accounting, forecasting, and data manipulation.

**expansion slot** - connector inside the Apple II microcomputer in which a peripheral circuit card is installed.

**floppy disk** - flat, round, flexible piece of magnetic tape used to record and store microcomputer programs and data.

**flowchart** - a diagram representing the order in which the steps of a microcomputer program are to be executed.

**game paddle** - an input device.

**generic computer** - term representing the concept of microcomputers, irrespective of any specific brand or model.

**hard copy** - printed output from a computer.

**hard disk** - a rigid disk which provides more storage capacity and faster data access than a floppy disk.

**hardware** - the physical components or equipment that make up a computer system.

hexidecimal system - base 16 number system.

high-level language - computer programming language that has English-like commands and is relatively easy to understand.

initialize/format - to prepare or structure a blank diskette to receive microcomputer data.

input - to enter data or instructions into the computer.

interactive - requiring direct communication or dialog between the micrcomputer and the user.

interface - connect or link two microcomputer devices.

K - kilobyte (1024 bytes): a measure of computer memory.

letter-quality printer - printer that produces results comparable in quality to those produced by an electric typewriter.

light pen - pen-like input device that responds to light on the video screen.

low-level language - programming language written in a code closely resembling the binary system.

mainframe computer - large computer system that can handle many jobs at once.

memory - place where the computer stores data and instructions: ram, rom, and disk storage.

menu - list of choice that the user can make in a program: displayed on the monitor.

microcomputer - "personal" computer: microprocessor, input-output, and memory.

microprocessor - a computer processing unit on a single silicon chip.

**minicomputer** - a medium-sized computer that can perform several jobs at once: about the size of a four-drawer file cabinet.

**modem** - device that permits data to be transmitted between computers over telephone lines.

**monitor** - video display terminal (CRT).

**network** - interconnected, individually controlled system of computers.

**operating system** - software that controls the operation of a computer.

**output** - processed information sent out from the computer to the user.

**peripherals** - devices that are connected to the computer to expand its capabilities, such as disk drives, monitors, modems, printers, etc.

**printer** - peripheral device that produces a hard copy of processed data.

**prompt** - symbol on the screen indicating that the computer is waiting for user input.

**program** - set of instructions for the computer to follow in processing data.

**programming language** - set of rules, conventions, and codes for writing a computer program.

**program disk** - floppy disk containing a program.

**public domain** - software belonging to the public and available for copying.

**RAM** - Random-Access Memory: temporary storage of programs and data while the computer is in operation.

**ROM** - Read-Only Memory: permanent memory of the computer, containing basic computer routines.

**sector** - portion of the surface of a floppy disk.

SIG - special interest group which deals with a specific area of microcomputing.

simulation - type of software in which the computer is used to model an experiment or real-world experience outside the normal classroom range.

software - computer programs and data disks that set the microcomputer in operation.

system master - utility disk that comes with the computer, containing organizational routines and utilities.

track - portion of the surface of an initialized floppy disk.

tutorial - type of CAI software that teaches a new concept.

volume - a collection of all the information on a single floppy disk.

word-processing - a computer application program that can be used to write and edit text.

write-protect - a precautionary activity which prevents the addition, deletion or change of information on a disk.

# Annotated Software Bibliography

# How To Use The Annotated Bibliography

The Annotated Software Bibliography contains information on over 200 microcomputer software programs that have been used effectively with adult students. These programs can be used in several adult education curriculum areas: Adult Basic Education, GED preparation, High School completion, adult practical literacy, staff in-service, teacher utilities, program management , and/or computer literacy for staff and students.

The Annotated Software Bibliography contains three sections: the ***Software Curriculum Guide,*** the ***Annotated Bibliography,*** and a ***List of Publishers*** **(Appendix C).**

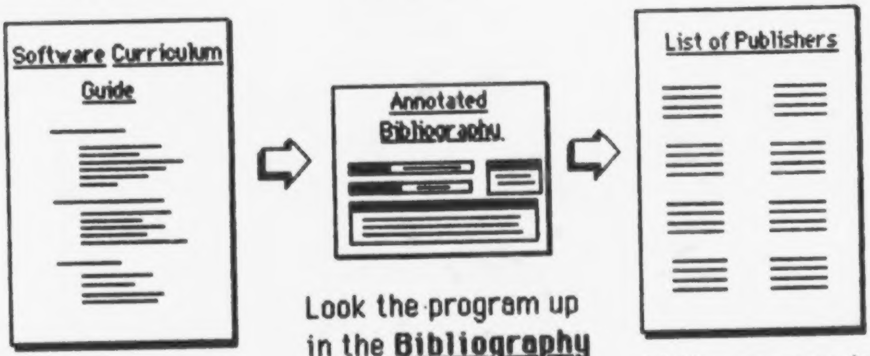
## Finding the Program You Need

There are three steps to finding the information you need about software programs included in this **Software Bibliography**. The three steps parallel the three sections listed above.

**Step One**

**Step Two**

**Step Three**



Find the software program which seems to meet your needs . . .

Look the program up in the **Bibliography** and see if it is suitable for your staff or student needs . . .

If the program is what you want, find the ordering information.

## General Information

No pricing information is given in the **Annotated Software Bibliography**, since this is subject to unannounced change by the publishers.

All software listed is for use with the Apple II family of microcomputers. Many packages are also available for other microcomputers. The program publisher will be able to provide that information to interested parties.

There are many other software programs that can be used with ABE students. This **Annotated Bibliography** only deals with those that have been used successfully in one ABE program. Other software resources are listed in the **Handbook** chapter on ***Choosing the Software.***

## Using the Software Curriculum Guide

The ***Software Curriculum Guide*** is divided into the curriculum topics most commonly used with Adult Basic Education students:

| | |
|---|---|
| ***Reading :*** | Basic Skills |
| | Practical & General Reading |
| ***Mathematics:*** | Whole Numbers |
| | Fractions |
| | Decimals |
| | Percents |
| | Measurement |
| | Graphs |
| | Algebra |
| | Geometry |
| | Problem-Solving |
| | Consumer Math |
| ***English:*** | Capitalization & Punctuation |
| | Grammar & Usage |
| | Vocabulary |
| | Spelling |
| | Composition |

***Social Studies:***
- History
- Economics
- Geography
- Political Science
- Behavioral Science

***Science:***
- Biology
- Chemistry
- Physics
- Earth Science
- Health

***General (Interdisciplinary):***
- Problem-Solving, Logical Thinking
- Visual Perception
- Comprehensive

***Microcomputers:***
- Anatomy & Operation
- Programming
- Application Programs
- Utility Programs
- Staff Development
- Miscellaneous

***Miscellaneous:***
- Assessment
- Typing

Beneath each subtopic in the ***Software Curriculum Guide***, are listed software programs that are suitable for use in teaching that particular curriculum topic. Some software programs can be used in more than one curriculum area, and are listed more than once in the ***Curriculum Guide***.

Entries in the ***Software Curriculum Guide*** and the ***Annotated Software Bibliography*** are made as individual computer programs. Some disks have several programs in different curriculum areas. These are listed separately under each appropriate topic. In some cases, whole packages relate to the same subtopic and are listed as one single entry.

# Interpreting the Software Annotation

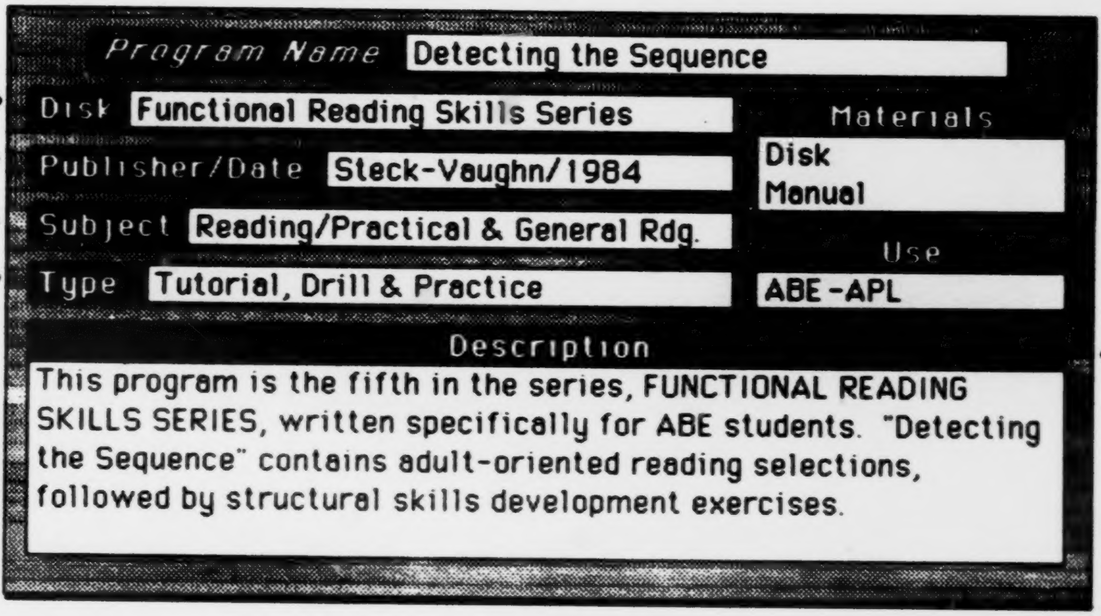
The illustration below is a sample entry from the **Annotated Bibliography**. Software entries are arranged alphabetically by Program Name.

**Program Name**: The name of the Program as listed in the ***Software Curriculum Guide***.

**Disk**: Name of the disk which contains the program.

**Publisher/Date**: Addresses are listed in ***Appendix C***.

**Materials**: All items included in the software package.



Program Name: Detecting the Sequence

Disk: Functional Reading Skills Series

Publisher/Date: Steck-Vaughn/1984

Subject: Reading/Practical & General Rdg.

Type: Tutorial, Drill & Practice

Materials:
Disk
Manual

Use: ABE-APL

Description

This program is the fifth in the series, FUNCTIONAL READING SKILLS SERIES, written specifically for ABE students. "Detecting the Sequence" contains adult-oriented reading selections, followed by structural skills development exercises.

**Type**: See the chapter on ***Choosing The Software*** for a discussion of the types of software

**Description**: Based on the software's suitability for use with adult students.

**Use**:
**ABE** -> Levels 0-6
**GED** -> Levels 7+
**HSC** -> High School Credit
**APL** -> Practical Literacy
**Staff** -> In-Service or Program Management Aids.
**Computer Literacy** -> for staff and/or students.

**Subject**: Curriculum topic for which software is appropriate. Based on divisions in ***Software Curriculum Guide***.

# Software Curriculum Guide

## Mathematics

### Mathematics/Whole Numbers

Addition I & II
Addition Logician
Addition Puzzles
Division I & II
Early Addition
Estimate
Factor Whiz
Factors
Heartbeat
Math Game
Mathware: Addition and Subtraction
Mathware: Multiplication and Division
Multiplication I & II
Multiplication Puzzles
Number Line
Primes
Round
Shopping
Speed Drill
Subtraction I & II
Tens
Whole Numbers

### Mathematics/Fractions

Adventures With Fractions
Fractions

Growgins' Fractions
Mathware: Fractions

## Mathematics/Decimals

Decimals
Hot Dog Stand
Mathware: Decimals
Number Line
Smart Shopper Marathon
Travel Agent Contest

## Mathematics/Percents

Estimate
Percents
Mathware: Ratios and Percents

## Mathematics/Measurement

Addition of Measurements
Conversions
Foreman's Assistant
Mathware: Ratios and Percents
Metric Estimate
Subtraction of Measurements

## Mathematics/Graphs

Graphing
Hurkle
Number Line
Slope
Snark

## Mathematics/Algebra

Algebra
The Algebra Challenge
Detective Tobbs
Factors
Factor Whiz
Primes
Solving Equations
Solving Inequalities
Slope
Tobbs Gets Tough

## Mathematics/Geometry

Geometric Shapes
Geometry (Lines & Triangles)
Geometry (Points & Angles)
Geometry (Quadrilaterals)
Mathware: Ratios and Percents
Parallelogram Area
Perimeters
Rectangle and Square Areas
Trapezoid and Triangle Areas

## Mathematics/Problem-Solving

Addition Puzzles
Bagels
Computer-Generated Math, Volume 1
Computer-Generated Math, Volume 2
Diagonals
Hurkle
Integrating Concepts
The King's Rule
Multiplication Puzzles
Number

Pooling Around
Squares
Thinking With Ink

## Mathematics/Consumer Math

Change
Decimals
Foreman's Assistant
Fractions
Hot Dog Stand
Percents
Smart Shopper Marathon
Travel Agent Contest
Whole Numbers

## Mathematics/Metrics

Decimals
Explorer Metros: Metric Adventures
Metric 21
Metric Estimate
Metric Length
Percents
Whole Numbers

## Mathematics/Number Systems

Binary Concentration
Binary Math
Binary TIC-TAC-TOE

## English

### English/Capitalization & Punctuation

Commas
End Marks, Semi-Colon & Colon

### English/Grammar and Usage

Adjectives
Adverbs
Create Test
Conjunctions
English Achievement I
English Achievement II
English Achievement III
English Achievement IV
English Achievement V
Interjections
Nouns
Prepositions
Pronouns
Verbs

### English/Vocabulary

Phonet
Prefixes
Word Attack!
Word Herd: Look Alikes
Word Herd: Sound Alikes
Worder
Wizard Magic
Wizard Memory
VOCAB

### English/Spelling

Cast a Spell
Hangman
Master Spell
Scramble
Spell 1
Spelling (Primary)
Spelling (Secondary)
Witch Word

### English/Composition

Writing a Character Sketch
Writing a Narrative

## Reading

### Reading/Basic Skills

Memory Myth
Pre-Reading/Counting

### Reading/Practical & General Reading

Detecting the Sequence
Drawing Conclusions
Following Directions
Following Written Directions
Getting the Facts
Getting the Main Idea
Locating the Answer
Reading Comprehension
Using the Content

## Reading/Literature

# Social Studies

### Social Studies/History

Civil
Elect 1, 2, and 3
Furs
History Star
Oregon

### Social Studies/Economics

Bargain
Electronic Money
Limits
Sell
Sumer

### Social Studies/Geography

Continent
Country
Nomad
States
States 2

### Social Studies/Political Science

Crisis
Computers in Government
Energy

Fail Safe
Future
Policy
Polls and Politics
Population
U.S. Constitution Tutor - 1
U.S. Constitution Tutor - 2
USPOP

### Social Studies/Behavioral Science

Crimex

## Science

### Science/Biology

Heart Lab
Human Body: An Overview
Pest
Skeletal System
Tag

### Science/Chemistry

### Science/Physics

Heatloss
ICBM
Simple Machines

### Science/Earth Science

Minerals
Quakes
Solar Distance
URSA

### Science/Health

Calorie Bank
Calories
Food Facts
Food Intake Analysis
Health Facts
Health Hazards
Ideal Weight
Lean
Nutrients
Salt and You
Smoking: It's Up To You

## General (Interdisciplinary)

### General/Problem-Solving, Logical Thinking

Arrow Dynamics
Classifying Conclusions
Diagonals
Factory
Integrating Concepts
Mazes of Rodentia
Moptown Hotel
Oh, Deer !
Queen Bee of Menta
Socratic Dialogue

### General/Visual Perception

Centering a Falling Line
Length Perception
Shape Recognition
Size Comparison
Star Trace
Tilt Maze
Visual Pursuit

### General/Comprehensive

FREELOADER 500

## Microcomputers

### Microcomputers/Anatomy & Operation

Apple Presents Apple
Apple Presents Apple IIc
Computer Simulation VIII
Electronic Tool
Know Your Apple IIe
Rocky's Boots
Simulated Computer
Three R's of Microcomputing

### Microcomputers/Programming

Apple SuperPilot
Arrow Dynamics
Experiencing Procedures
Intro to Applesoft BASIC
Logic Maps
Mouse in the Maze

## Microcomputers/Application Programs

Appleworks
Apple Writer IIe
Bank Street Writer
Classification
Computing Tools: Databases
Computing Tools: Spreadsheets
Computing Tools: Word Processing
Data Handler
Data Handler in the Classroom
Electronic Spreadsheet
PFS: FILE
PFS: REPORT
Processing Words
Quick File
Visicalc

## Microcomputers/Utility Programs

Computer-Generated Math, Volume 1
Computer-Generated Math, Volume 2
Create Test
Master Spell
PIXIT/Shape Library #1
Puzzles and Posters
Spelling (Primary)
Spelling (Secondary)
Study Guide
VOCAB
Wizard Magic
Wizard Memory
Word Attack!
Worder

### Microcomputers/Staff Development

ABE Microcomputer Workshops
Computers in Teaching
Computer Literacy Instructional Program

### Microcomputers/Miscellaneous

Computer Literacy: Hands-On

## Miscellaneous

### Miscellaneous/Assessment

GED-100: Pre-GED Module
GED-100: GED Module
Strategies for Test Taking

### Miscellaneous/Typing

MasterType

# Annotated Software Bibliography

**Program Name** ABE Microcomputer Workshops

**Disk** ABE Microcomputer Workshops

**Publisher/Date** Cinti Public Schools/'85

**Subject** Microcomputers/Staff Developmnt

**Type** Tutorial, Assessment

**Materials**

Disk

**Use**

Staff

**Description**

This diskette, for use in ABE Staff Development, contains three parts: an introduction discusses the role of microcomputers in ABE; two quizzes are used as hands-on post tests, following related staff development sessions. Teacher scores are tallied automatically.

**Program Name** Addition I & II

**Disk** Basic Math Practice

**Publisher/Date** Steck-Vaughn/1984

**Subject** Mathematics/Whole Numbers

**Type** Drill & Practice

**Materials**

2 Disks
Manual

**Use**

ABE

**Description**

This package provides drill and practice on basic addition skills. The display has large letters and numbers, suitable for the visually impaired, and there are color graphics to help reinforce step-by-step procedures. The teacher may control the level of difficulty in each session, and student scores are tallied.

**Program Name** Addition Logician

**Disk** Addition Logician

**Publisher/Date** MECC/1984

**Subject** Mathematics/Whole Numbers

**Type** Drill & Practice, Game

**Materials**
Disk
Manual

**Level**
ABE

**Description**

There are several activities and games on this disk, involving addition of whole numbers which need regrouping. Problems are presented sequentially, by level of difficulty. Activities include: THE FENCE GAME; ZEBUG NIM; THREE IN A ROW; REPEAT AFTER ME; RACE TIME. The computer keeps records of student performance.

**Program Name** Addition of Measurements

**Disk** Mathematics Volume 2 - Measurement

**Publisher/Date** MECC/1981

**Subject** Mathematics/Measurement

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Level**
ABE-GED-HSC-APL

**Description**

This tutorial is followed by practice in adding English mixed measurements.

**Program Name** Addition Puzzles

**Disk** Teasers by Tobbs

**Publisher/Date** Sunburst/1982

**Subject** Mathematics/Whole Numbers

**Type** Drill & Practice, Game

**Materials**
Disk
Manual

**Level**
ABE-HSC

**Description**

A game format provides drill in addition and subtraction of one and two digit whole numbers. This program also provides practice in logical thinking.

**Program Name** Adjectives

**Disk** English: Parts of Speech

**Publisher/Date** MECC/1981

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program defines and gives examples of adjectives. There is a diagnostic pre test and remediation offered for specific areas of diagnosed need. The program also contains a review. Pre and post tests can be copied on a printer.

**Program Name** Adventures with Fractions

**Disk** Adventures with Fractions

**Publisher/Date** MECC/1983

**Subject** Mathematics/Fractions

**Type** Tutorial, Game

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

This program uses interactive tutorials to teach two methods of ordering unlike fractions: common denominators and cross products. There is also a game, RANSOM, in which the students have an opportunity to practive ordering fractions. There is a teacher option to select the level of difficulty.

**Program Name** Adverbs

**Disk** English: Parts of Speech

**Publisher/Date** MECC/1981

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program defines and gives examples of adverbs as words used to modify verbs, adjectives or another adverb. It is an individualized approach with a diagnostic pre test and practice drills on concepts misunderstood.

**Program Name** Algebra

**Disk** Mathematics Volume 1

**Publisher/Date** MECC/1980

**Subject** Mathematics/Algebra

**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
GED-HSC

**Description**

This program gives guided practice in solving linear equations with one variable.

**Program Name** Algebra Challenge

**Disk** Tobbs Learns Algebra

**Publisher/Date** Sunburst/1983

**Subject** Mathematics/Algebra

**Type** Problem Solving

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

This is an exercise with six levels of difficulty, dealing with algebraic problem solving. Problems are presented in a number grid format.

**Program Name** Apple Presents Apple

**Disk** Apple Presents Apple

**Publisher/Date** Apple Computer/1982

**Subject** Microcomputers/Anat. & Operation

**Type** Tutorial

**Materials**
Disk

**Use**
Computer Literacy

**Description**

This program is an interactive tutorial, introducing the student to the Apple microcomputer, keyboard and monitor.

**Program Name** Apple Presents Apple IIc

**Disk** Apple Presents Apple IIc

**Publisher/Date** Apple Computer/1984

**Subject** Microcomputers/Anat. & Operation

**Type** Tutorial, Game

**Materials**
Disk (Two Sides)

**Use**
Computer Literacy

**Description**

Side One of this disk contains an introduction to the Apple IIc computer, keyboard and monitor. Side Two, entitled THE APPLE AT PLAY, is a collection of microcomputer games and activities relative to the Apple IIc.

**Program Name** Apple SuperPilot

**Disk** Apple SuperPilot

**Publisher/Date** Apple Computer/1982

**Subject** Microcomputers/Programming

**Type** Application, Utility

**Materials**
Authoring Disk
Manuals Tutorial

**Use**
Staff

**Description**

This is a program authoring system, whereby a person with no programming experience can create lessons for use on the microcomputer, complete with sound, graphics and decorative letter sets. There is a two-disk tutorial that teaches the basic SuperPilot commands through a hands-on series of lessons.

**Program Name** Apple Writer IIe

**Disk** Apple Writer IIe

**Publisher/Date** Apple Computer/1982

**Subject** Microcomputers/Application Prog.

**Type** Application

**Materials**
Program Disk
Manual

**Use**
Computer Literacy

**Description**

This is a word-processing package for use on the Apple IIe microcomputer.

**Program Name** Appleworks

**Disk** Appleworks

**Publisher/Date** Apple Computer/1984

**Subject** Microcomputers/Application Prog.

**Type** Application

**Materials**
4 Disks Manuals
Reference Cards

**Use**
Computer Literacy

**Description**

This is an integrated software package, offering word processing, data-base management and electronic spreadsheet programs for the Apple IIe microcomputer. It contains a tutorial disk and manual which can be used by students and staff for instructional purposes.

**Program Name** Arrow Dynamics

**Disk** Arrow Dynamics

**Publisher/Date** Sunburst/1983

**Subject** Microcomputers/Programming

**Type** Game, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
Computer Literacy

**Description**

This is a programming game that gives students practice in logical thinking and the formulation of problem-solving strategies. No prior knowledge of any programming language is needed.

**Program Name** Bagels

**Disk** Guessing and Thinking

**Publisher/Date** MECC/1980

**Subject** Mathematics/Problem Solving

**Type** Game

**Materials**
Disk

**Use**
ABE-GED

**Description**

This is a game of logic in which the computer provides clues to help the student guess a 2, 3 or 4-digit number. This program is also suitable for the hearing impaired. BAGELS is also located on ELEMENTARY VOLUME 1 - MATHEMATICS.

**Program Name** Bank Street Writer

**Disk** Bank Street Writer

**Publisher/Date** Broderbund Software/'82

**Subject** Microcomputers/Application Prog.

**Type** Application

**Materials**
Disk Tutorial
Manual

**Use**
Computer Literacy

**Description**

This is a very simple word-processing program. The package includes a disk tutorial, to introduce the student to the Bank Street Writer.

**Program Name** Bargain

**Disk** Social Studies Volume 2-Simulations

**Publisher/Date** MECC/1980

**Subject** Social Studies/Economics

**Type** Simulation

**Materials**
Disk Worksheets
Manual

**Use**
GED-HSC

**Description**

This simulation introduces the process of collective bargaining. Through role playing, the student and computer engage in rounds of negotiation.

**Program Name** Binary Concentration

**Disk** Number Systems (CLIM)

**Publisher/Date** MECC/1983

**Subject** Mathematics/Number Systems

**Type** Game

**Materials**
Disk Handouts
Manual

**Use**
Computer Literacy

**Description**

This is a game of concentration in which the students try to match decimal numbers with their binary equivalents.

**Program Name** Binary Math

**Disk** Binary Math

**Publisher/Date** Hartley/1984

**Subject** Mathematics/Number Systems

**Type** Tutorial

**Materials**
Disk
Manual

**Use**
Computer Literacy

**Description**
This program can also be used to teach concepts of computer literacy. There are 12 lessons dealing with understanding number systems in general, and binary in particular. Worksheets can be generated.

**Program Name** Binary TIC-TAC-TOE

**Disk** Number Systems (CLIM)

**Publisher/Date** MECC/1983

**Subject** Mathematics/Number Systems

**Type** Game, Drill & Practice

**Materials**
Disk Handouts
Manual

**Use**
Computer Literacy

**Description**
This program gives practice converting binary numbers to decimal, and decimal numbers to binary. Presentation is in the format of a game of TIC-TAC-TOE.

**Program Name** Calorie Bank

**Disk** Elementary Volume 13 - Nutrition

**Publisher/Date** MECC/1980

**Subject** Science/Health

**Type** Tutorial

**Materials**
Disk
Manual

**Use**
ABE-HSC-APL

**Description**
This program introduces students to nutrition through a short, colorful, animated sequence.

**Program Name** Calories

**Disk** Elementary Volume 13 - Nutrition

**Publisher/Date** MECC/1980

**Subject** Science/Health

**Type** Problem Solving

**Materials**
Disk
Manual

**Use**
ABE-HSC-APL

**Description**

THis program compares the calories consumed in a one-day diet entered by the student, with the calories used through the student's activities for the day.

**Program Name** Cast a Spell

**Disk** Word Wizards

**Publisher/Date** MECC/1984

**Subject** English/Spelling

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE

**Description**

This program gives spelling practice and drill on a list of teacher-determined spelling words or vocabulary.

**Program Name** Centering a Falling Line

**Disk** Perception Games

**Publisher/Date** Eduware/1980

**Subject** General/Visual Perception

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program tests visual judgment and reflexes. The object is to stop a falling vertical line when it is directly centered (along a horizontal axis) with another vertical line of different length.

**Program Name** Change

**Disk** Elementary Volume 1 - Mathematics

**Publisher/Date** MECC/1980

**Subject** Mathematics/Consumer Math

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-APL

**Description**

This program is a drill on making change.

**Program Name** Civil

**Disk** Elementary Volume 3 - Social Studies

**Publisher/Date** MECC/1980

**Subject** Social Studies/History

**Type** Simulation

**Materials**
Disk Worksheets
Manual

**Use**
ABE-HSC-APL

**Description**

This program simulates 14 Civil War battles. Students decide battle strategy, allocation of money and supplies, and learn to weigh the problems faced by a commander in the Civil War.

**Program Name** Classification

**Disk** Classification

**Publisher/Date** MECC/1983

**Subject** Microcomputers/Application Prog.

**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
Computer Literacy

**Description**

This program uses a simple database system to enter, search and sort data related to scientific classification. It gives instruction and practice in organizing large bodies of information for the purposes of classification. This program is also suitable for the curriculum area of science.

**Program Name** Classifying Conclusions

**Disk** Thinking & Learning

**Publisher/Date** EME/1981

**Subject** General/Problem Solving-Logic

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

This program helps the student differentiate between three methods of arriving at conclusions: objective, rational and intuitive. The student is helped to appreciate the potential value and merit of each method.

**Program Name** Commas

**Disk** Punctuation Skills: Commas

**Publisher/Date** Milton Bradley/1982

**Subject** English/Capitalizat'n & Punctuat'n

**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

The tutorial begins by describing uses of a comma and giving illustrations. This is followed by a drill & practice session and then a mastery quiz. The students set their own pace for learning. Finally, there is a cumulative review exercise in the form of a game called Alien Raiders.

**Program Name** Computer Literacy Instr. Prog.

**Disk** Computer Lit. Instructional Program

**Publisher/Date** Education'l Activities/83

**Subject** Microcomputers/Staff Developmnt

**Type** Tutorial

**Materials**
Disk
Manual

**Use**
Staff

**Description**

This tutorial discusses aspects of setting up a microcomputer facility. Topics include: Introduction to the Microcomputer; The Microcomputer as a Calculator; Instruction via the Microcomputer; Selection & Evaluation of Software; Setting up the Microcomputer Facility; Managing the Microcomputer Facility.

**Program Name** Computer Literacy: Hands-On

**Disk** Computer Literacy:Hands-On Approach

**Publisher/Date** McGraw Hill/1983

**Subject** Microcomputers/Miscellaneous

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Textbook

**User**
Computer Literacy

**Description**

This is a comprehensive course in computer literacy and BASIC programming. It integrates traditional textbook learning with CAI, disk tutorial and drill & practice.

**Program Name** Computer Simulation VIII

**Disk** Computer Simulation VIII

**Publisher/Date** Innovative Prog.Assoc/82

**Subject** Microcomputers/Anat. & Operation

**Type** Tutorial

**Materials**
Disk

**User**
Computer Literacy

**Description**

This program shows the purpose of microcomputer simulations and gives examples of each kind. Sections include 1)what a simulation can do, 2)types of simulations, 3)a user-controlled simulation, 4)a training simulation, 5)an educational simulation, 6)a financial simulation, and 7)a hypothetical simulation.

**Program Name** Computer-Generated Math, V1

**Disk** Computer-Generated Mathematics, V1

**Publisher/Date** MECC/1982

**Subject** Mathematics/Problem Solving

**Type** Utility

**Materials**
Disk
Manual

**User**
Staff

**Description**

THis package can be used to generate mathematics worksheets or tests. There are 316 areas to choose from, including such things as interpreting tables, choosing operations for word problems, reading graphs, mazes, puzzles and more. A printer is needed to use this package.

**Program Name** Computer-Generated Math, V2

**Disk** Computer-Generated Mathematics, V2

**Publisher/Date** MECC/1982

**Subject** Mathematics/Problem Solving

**Type** Utility

**Materials**
Disk
Manual

**Use**
Staff

**Description**

This utility can be used to create computer-generated mathematics worksheets and tests. There are 236 topics to choose from, covering approximation, estimation, purchasing, money, multiplication & division, picture puzzles and equations. A printer is needed for this utility.

**Program Name** Computers in Government

**Disk** Computers in Government

**Publisher/Date** MECC/1984

**Subject** Social Studies/Political Science

**Type** Tutorial, Simulation

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This package shows students how computerized information is gathered, stored and used by the U.S. government.

**Program Name** Computers in Teaching

**Disk** Computers in Teaching

**Publisher/Date** MECC/1984

**Subject** Microcomputers/Staff Developmnt

**Type** Tutorial

**Materials**
2 Disks
Manual

**Use**
Computer Literacy

**Description**

This program gives an overview of the instructional uses of microcomputers. The package contains a two-disk tutorial on such topics as learning objectives, lesson planning, classroom strategy, and different types of educational software.

**Program Name** Computing Tools: Databases

**Disk** Computing Tools: Databases

**Publisher/Date** MECC/1984

**Subject** Microcomputers/Application Prog.

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
Computer Literacy

**Description**
This tutorial on data-base management deals with the capabilities of database systems to store, retrieve and organize information. Hands-on practice is provided, using MECC'S database program DATA HANDLER. 2 disk drives and a printer are needed to use this program.

**Program Name** Computing Tools: Spreadsheets

**Disk** Computing Tools: Spreadsheets

**Publisher/Date** MECC/1984

**Subject** Microcomputers/Application Prog.

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
Computer Literacy

**Description**
This tutorial explains the use of electronic spreadsheets to solve business and program management/planning problems. Activities are designed to give the student practical electronic spreadsheet experience, by using the VISICALC spreadsheet. This program requires a copy of VISICALC and a printer for effective use.

**Program Name** Computing Tools: Word Process.

**Disk** Computing Tools: Word Processing

**Publisher/Date** MECC/1984

**Subject** Microcomputers/Application Prog.

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
Computer Literacy

**Description**
This hands-on tutorial introduces word processing as a tool to increase personal productivity. The introductory phase of the program uses either BANK STREET WRITER, or MECC'S WORD HANDLER as a word-processing package. Later program activities focus on APPLEWRITER IIe. A printer is needed for this program.

**Program Name** Conjunctions

**Disk** English: Parts of Speech

**Publisher/Date** MECC/1981

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program defines and gives examples of conjunctions. It is an individualized approach, with a diagnostic pre test and remediation when needed for specific concepts. Pre and post tests can be copied on a printer.

**Program Name** Continent

**Disk** Social Studies Volume 2-Simulations

**Publisher/Date** MECC/1980

**Subject** Social Studies/Geography

**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

This program is a drill on 86 countries, and the continents on which they are located.

**Program Name** Conversions

**Disk** Mathematics Volume 2 - Measurement

**Publisher/Date** MECC/1981

**Subject** Mathematics/Measurement

**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This program consists of several tutorials, followed by practice sessions on converting the following units of measure: liquids, lenghts, time and weight.

**Program Name** Country

**Disk** Social Studies Volume 2-Simulations

**Publisher/Date** MECC/1980

**Subject** Social Studies/Geography

**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

This program contains a drill on the capitals of 86 nations of the world. Correct spelling is required.

**Program Name** Create Test

**Disk** English: Parts of Speech

**Publisher/Date** MECC/1981

**Subject** English/Grammar and Usage

**Type** Utility

**Material**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program is a hidden option on the above disk, by which teachers can customize pre and post tests for their students. The teacher may generate a test of up to sixty items from the file on ENGLISH: PARTS OF SPEECH, based on student need.

**Program Name** Crimex

**Disk** Social Studies Volume 1

**Publisher/Date** MECC/1981

**Subject** Social Studies/Behavioral Science

**Type** Simulation

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

This program simulates crime control in a large city.

**Program Name** Crisis

**Disk** Social Studies Volume 2-Simulations

**Publisher/Date** MECC/1980

**Subject** Social Studies/Political Science

**Type** Simulation

**Materials**
Disk Worksheets
Manual

**Use**
GED-HSC

**Description**

This simulation takes the student through possible moves and counter moves in an international crisis. It centers on the East-West Berlin conflict between the U.S. and the Soviet Union in 1975.

**Program Name** Data Handler

**Disk** Data Handler

**Publisher/Date** MECC/1983

**Subject** Microcomputers/Application Prog.

**Type** Application

**Materials**
Disk
Manual

**Use**
Computer Literacy

**Description**

This is a simple, easy-to use database program, that allows the student to create files, enter, sort and retrieve data, design and print reports and labels. It requires an Apple II computer, two disk drives and a printer.

**Program Name** Data Handler in the Classroom

**Disk** Data Handler in the Classroom

**Publisher/Date** MECC/1984

**Subject** Microcomputers/Application Prog.

**Type** Tutorial, Drill & Practice

**Materials**
Disk Teacher Man.
Student Manual

**Use**
Computer Literacy

**Description**

This tutorial teaches database concepts, using MECC'S DATA HANDLER. Students learn to enter data, sort and search among records, create and save files, create reports and mailing labels, and print reports. Use of this program requires DATA HANDLER, two disk drives and a printer.

**Program Name** Decimals

**Disk** Automotive Technician Mathematics 2

**Publisher/Date** MECC/1983

**Subject** Mathematics/Consumer Math

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This program consists of a tutorial, plus randomly-generated practice problems, and a test on applying decimals to automotive mechanics problems. A teacher option allows the selection of English or metric units of measure. Tests can be printed out.

**Program Name** Detecting the Sequence

**Disk** Functional Reading Skills Series

**Publisher/Date** Steck-Vaughn/1984

**Subject** Reading/Practical & General Rdg.

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE

**Description**

This program is the fifth in the series, FUNCTIONAL READING SKILLS SERIES, written specifically for ABE students. "Detecting the Sequence" contains adult-oriented reading selections, followed by structural skills development exercises.

**Program Name** Detective Tobbs

**Disk** Tobbs Learns Algebra

**Publisher/Date** Sunburst/1983

**Subject** Mathematics/Algebra

**Type** Problem Solving

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

This is an exercise in algebraic problem solving, with four levels of difficulty. The students have to determine the rule used to formulate the problem.

**Program Name** Diagonals

**Disk** Problem Solving Strategies

**Publisher/Date** MECC/1983

**Subject** Mathematics/Problem Solving

**Type** Tutorial

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

This interactive tutorial teaches students the problem solving strategies of trial and error, exhaustive listing and simplifying the problem. Students collect data and use the above strategies to solve program problems, making charts and finding patterns.

**Program Name** Division I & II

**Disk** Basic Math Practice

**Publisher/Date** Steck-Vaughn/1984

**Subject** Mathematics/Whole Numbers

**Type** Drill & Practice

**Materials**
2 Disks
Manual

**Use**
ABE

**Description**

This program provides drill & practice on division skills. The large letters and numbers make it suitable for the visually impaired, and color graphic and sound help reinforce step-by-step procedures. There are several levels of difficulty, controlled by the teacher, and student scores are tallied.

**Program Name** Drawing Conclusions

**Disk** Functional Reading Skills Series

**Publisher/Date** Steck-Vaughn/1984

**Subject** Reading/Practical & General Rdg.

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE

**Description**

This program is the seventh and last in the series, FUNCTIONAL READING SKILLS SERIES, written specifically for Adult Basic Education students. "Drawing Conclusions" contains adult-oriented reading selections, levels 2-4, followed by structural skills development exercises.

| | |
|---|---|
| Program Name | Early Addition |
| Disk | Early Addition |
| Publisher/Date | MECC/1983 |
| Subject | Mathematics/Whole Numbers |
| Type | Drill & Practice |
| Materials | Disk<br>Manual |
| Use | ABE |

**Description**

This package contains several whole number addition activities: SURPRISE PACKAGE->sums of ten or less; BALLOON SHOOT-> three addends; BUILD AN AIRPLANE-> missing addends; CREATE A CREATURE-> sums between 11 and 18; FIRE FIGHTERS->three addends with sums greater than ten; FROG RACE-> timed review.

| | |
|---|---|
| Program Name | Elect 1, 2, and 3 |
| Disk | Social Studies Volume 1 |
| Publisher/Date | MECC/1981 |
| Subject | Social Studies/History |
| Type | Simulation |
| Materials | Disk<br>Manual |
| Use | GED-HSC |

**Description**

There are three simulations in this program: ELECT 1 simulates presidential elections in the 19th century; ELECT 2 simulates presidential elections in the 20th century; ELECT 3 simulates a presidential election based on student-entered factors.

| | |
|---|---|
| Program Name | Electronic Money |
| Disk | Electronic Money |
| Publisher/Date | MECC/1983 |
| Subject | Social Studies/Economics |
| Type | Tutorial, Simulation |
| Materials | Disk<br>Manual |
| Use | ABE-APL |

**Description**

This program contains two modules: 1)Lesson One gives the student a brief history of money; 2)Lesson Two contains a program, ELECTRONIC MONEY, in which the students simulate the use of electronic money transfers to deal with a family budget. There is a final quiz to evaluate student progress.

**Program Name** Electronic Spreadsheet

**Disk** The Electronic Spreadsheet (Revised)

**Publisher/Date** MECC/1983

**Subject** Microcomputers/Application Prog.

**Type** Tutorial, Drill & Practice

**Materials**
Disk Tchr. Manual
Student Manual

**Use**
Computer Literacy

**Description**

This tutorial introduces the student to the power of the electronic spreadsheet, via VISICALC. Students learn to use VISICALC, a popular commercial spreadsheet, to solve practical business problems in the areas of consumer economics, business, record keeping, data entry, accounting and office procedures.

**Program Name** Electronic Tool

**Disk** The Electronic Tool

**Publisher/Date** Micro Power & Light/ '81

**Subject** Microcomputers/Anat. & Operation

**Type** Tutorial

**Materials**
Disk
Manual

**Use**
Computer Literacy

**Description**

This tutorial discusses six common ways we use computers: 1)storing information by computers, 2)recalling information from computers, 3)organizing information in computers, 4)calculations the computer performs, 5)the computer as a teacher, and 6)simulations and problem solving with the computer.

**Program Name** End Marks, Semi-Colon & Colon

**Disk** Punctuation Skills: End Marks, Colons

**Publisher/Date** Milton Bradley/1982

**Subject** English/Capitalizat'n & Punctuat'n

**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

The tutorial discusses the definition and use of end marks, semi-colons and colons. It is followed by a drill & practice session, an optional review and a mastery quiz. The student may set the learning pace.

**Program Name** Energy

**Disk** Social Studies Volume 1

**Publisher/Date** MECC/1981

**Subject** Social Studies/Political Science

**Type** Simulation

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

This is a simulation in which the student makes energy related decisions.

**Program Name** English Achievement I

**Disk** English Achievement I

**Publisher/Date** Microcomputr Wkshps/82

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

The ENGLISH ACHIEVEMENT SERIES is a set of 5 disks designed to provide student instruction and drill on various sections of the CEEB English Composition Achievement Test. This first disk helps identify the location of an error in an "underlined choice" format, similar to that of the GED.

**Program Name** English Achievement II

**Disk** English Achievement II

**Publisher/Date** Microcomputr Wkshps/82

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

The ENGLISH ACHIEVEMENT SERIES is a set of 5 disks designed to provide instruction and drill on various sections of the CEEB English Composition Achievement Test. This second disk helps the student identify the nature of an error, giving practice in the "labeling format" of this test.

**Program Name** English Achievement III

**Disk** English Achievement III

**Publisher/Date** Microcomputr Wkshps/82

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**

Disk
Manual

**Use**

GED-HSC

**Description**

The ENGLISH ACHIEVEMENT SERIES is a set of 5 disks designed to give instruction and drill on various sections of the CEEB English Composition Achievement Test. This third disk provides practice in the "variation format," helping students select the correct rewrite of an error.

**Program Name** English Achievement IV

**Disk** English Achievement IV

**Publisher/Date** Microcomputr Wkshps/82

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**

Disk
Manual

**Use**

GED-HSC

**Description**

The ENGLISH ACHIEVEMENT SERIES is a set of 5 disks designed to give instruction and practice in various sections of the CEEB English Composition Achievement Test. The fourth disk helps the student identify the nature of the grammatical error, dealing with the "labeling format" of the CEEB test.

**Program Name** English Achievement V

**Disk** English Achievement V

**Publisher/Date** Microcomputr Wkshps/82

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**

Disk
Manual

**Use**

GED-HSC

**Description**

The ENGLISH ACHIEVEMENT SERIES is a set of 5 disks designed to give instruction and drill for various sections of the CEEB English Composition Achievement Test. Disk 5 deals with the "editing format" of this test, giving students practice in reqriting and editing sentences.

Program Name: Estimate

Disk: Estimation

Publisher/Date: MECC/1984

Subject: Mathematics/Whole Numbers

Type: Drill & Practice

Materials: Disk Worksheets Manual

Use: ABE-GED-HSC

Description

This program presents drills in estimating whole numbers and percents.

Program Name: Experiencing Procedures

Disk: Experiencing Procedures

Publisher/Date: MECC/1983

Subject: Microcomputers/Programming

Type: Tutorial, Drill & Practice

Materials: Disk Manual

Use: Computer Literacy

Description

This program introduces a beginner to elementary programming principles, using FLY, a simple, graphic-oriented programming language.

Program Name: Explorer Metros: Metric Adven.

Disk: Explorer Metros: Metric Adventure

Publisher/Date: Sunburst/1982

Subject: Mathematics/Metrics

Type: Simulation

Materials: Disk Worksheets Manual

Use: ABE-GED-HSC-APL

Description

This is a space exploration simulation designed to assess and challenge the student's ability to do metric estimation. There is a teacher option, EXPLORER METROS: EDITOR, which allows changes to be made in the program, to fit the student's needs.

**Program Name** Factor Whiz

**Disk** Prime Numbers

**Publisher/Date** MECC/1984

**Subject** Mathematics/Whole Numbers

**Type** Game

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC-APL

**Description**
This game can be played by two students, or by one student playing against the computer. It requires the application of factoring skills.

**Program Name** Factors

**Disk** Prime Numbers

**Publisher/Date** MECC/1984

**Subject** Mathematics/Whole Numbers

**Type** Simulation

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC-APL

**Description**
This program computes and lists the factors of any number between 1 and 5000.

**Program Name** Factory

**Disk** The Factory

**Publisher/Date** Sunburst/1983

**Subject** General/Problem Solving-Logic

**Type** Game

**Materials**
Disk
Manual

**Use**
ABE-GED

**Description**
This program develops skills in visual discrimination, spatial perception and logical thinking. Students are asked to replicate a "product" using machines that punch, stripe and rotate a piece of raw material. Students test the machines to see how they work, and create the specific assembly line needed to make the product.

**Program Name** Fail Safe

**Disk** Social Studies Volume 2-Simulations

**Publisher/Date** MECC/1980

**Subject** Social Studies/Political Science

**Type** Simulation

**Materials**
Disk Worksheets
Manual

**Use**
GED-HSC

**Description**

This group simulation has roles for the President and eleven advisors. Students, in these roles, make decisions in crisis situations.

**Program Name** Following Directions

**Disk** Functional Reading Skills Series

**Publisher/Date** Steck-Vaughn/1984

**Subject** Reading/Practical & General Rdg.

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE

**Description**

This program is the first in the series, FUNCTIONAL READING SKILLS SERIES, written specifically for ABE students. "Following Directions" contains adult-oriented reading selections, levels 2-4, followed by structural skills development exercises.

**Program Name** Following Written Directions

**Disk** Following Written Directions

**Publisher/Date** MCE/1982

**Subject** Reading/Practical & General Rdg.

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Worksheets

**Use**
ABE-HSC

**Description**

This program teaches students to follow written directions, and contains application exercises in the skill. There are increasing levels of difficulty which can be determined by the teacher. The teacher also has an option to determine the reading level at which the material is presented.

**Program Name** Food Facts

**Disk** Food Facts

**Publisher/Date** MECC/1982

**Subject** Science/Health

**Type** Tutorial

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

Topics covered include: sugar content in cereals; chemicals in food; analysis of nutrients in fast foods; RDA of nutrients in 64 foods (food graphs); fat and water soluble vitamins.

**Program Name** Food Intake Analysis

**Disk** Nutrition Volumn 1

**Publisher/Date** MECC/1982

**Subject** Science/Health

**Type** Tutorial

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This interactive tutorial computes and analyzes the nutrient levels of all the food an individual student has consumed in one day. It identifies the nutrients and their sources, and discusses ways the student can develop better food selection habits. The support manual contains a food catalog and menu plans.

**Program Name** Foreman's Assistant

**Disk** Survival Math

**Publisher/Date** Sunburst/1982

**Subject** Mathematics/Measurement

**Type** Simulation, Drill & Practice

**Materials**
Disk
Manual

**Use**
GED-HSC-APL

**Description**

The student plans a playroom and buys the materials to build it, while keeping within a time limit and budget. Skills addressed in this program include money/decimals, measurement, conversion, estimation, fractions, construction technique, area, perimeter and whole numbers.

**Program Name** Fractions

**Disk** Automotive Technician Mechanics 1

**Publisher/Date** MECC/1983

**Subject** Mathematics/Consumer Math

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use** ABE-GED-HSC-APL

**Description**

This program includes a tutorial, plus randomly-generated practice problems and tests using fractions in automotive mechanics problems. English measurements are used. Student tests can be copied on the printer.

**Program Name** FREELOADER 500

**Disk** FREELOADER 500 SOFTWARE LIBRARY

**Publisher/Date** American Software/1982

**Subject** General/Comprehensive

**Type** Tutorial, Drill & Practice

**Materials**
10 Disks

**Use** ABE-GED-HSC-APL

**Description**

This is actually a collection of 10 disks, containing over 300 educational public-domain programs. Content includes reading, math, science, English, administrative tools and educational games. Levels range from beginning through advanced. Most, thought not all, are suitable for adult students.

**Program Name** Furs

**Disk** Elementary Volume 6 - Social Studies

**Publisher/Date** MECC/1980

**Subject** Social Studies/History

**Type** Simulation

**Materials**
Disk
Manual

**Use** ABE-HSC

**Description**

This is a simulation of the fur trade as it was carried on in eastern North America in the 1770's.

**Program Name** Future

**Disk** Social Studies Volume 1

**Publisher/Date** MECC/1981

**Subject** Social Studies/Political Science

**Type** Simulation

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**
This simulation shows the possible effects various decisions would have on energy supplies.

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**Program Name** GED-100: GED Module

**Disk** GED-100

**Publisher/Date** Steck-Vaughn/1984

**Subject** Miscellaneous/Assessment

**Type** Assessment

**Materials**
7 Disks Manual
Student Test-Book

**Use**
GED

**Description**
The GED-100 is a management system that assesses student skill levels, defines deficiencies, and assigns remediation materials based on the printed materials available in the student's classrrom. The "GED Module" deals with students operating at level 7.0 and above, and covers 54 skills in the 5 GED Test areas.

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**Program Name** GED-100: Pre-GED Module

**Disk** GED-100

**Publisher/Date** Steck-Vaughn/1984

**Subject** Miscellaneous/Assessment

**Type** Assessment

**Materials**
7 Disks Manual
Student Test-Book

**Use**
ABE

**Description**
The GED-100 is a management system that assesses student skill levels, defines deficiencies, and assigns remediation materials based on printed materials available in the specific classroom. The "Pre-GED Module" deals with reading levels 5.5-6.9, and covers 57 skills in the 5 GED areas.

**Program Name** Geometric Shapes

**Disk** Mathematics Volume 3 - Geometry

**Publisher/Date** MECC/1980

**Subject** Mathematics/Geometry

**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

This program provides drill and practice in identifying six basic geometric shapes.

**Program Name** Geometry (Lines & Triangles)

**Disk** Elementary Volume 9 - Geometry

**Publisher/Date** MECC/1981

**Subject** Mathematics/Geometry

**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual Quiz

**Use**
ABE-GED-HSC

**Description**

This program covers two topics, each containing a tutorial, student handouts and a quiz: LINES defines parallel, perpendicular and intersecting lines; TRIANGLES discusses scaline, isosceles, equilateral, acute, right, obtuse and equiangular triangles. Quizzes follow both tutorials.

**Program Name** Geometry (Points & Angles)

**Disk** Elementary Volume 8 - Geometry

**Publisher/Date** MECC/1981

**Subject** Mathematics/Geometry

**Type** Tutorial

**Materials**
Disk Worksheets
Manual Quiz

**Use**
ABE-GED-HSC

**Description**

There are two tutorials in this program: POINTS defines points, lines and line segments; ANGLES defines rays, angles and degrees. Both tutorials contain student handouts and quizzes related to the concept being covered.

Geometry (Quadrilaterals)

Elementary Volume 10 - Geometry

MECC/1981

Mathematics/Geometry

Tutorial

Disk Worksheets
Manual Quiz

ABE-GED-HSC

There are two interactive tutorials in this program, both containing student worksheets and a quiz: QUADRILATERAL discusses quadrilaterals (parallelograms, trapezoids, rectangles, squares and rhombus). AREA & PERIMETER helps students develop formulas for perimeter and area of quadrilaterals and triangles.

Getting the Facts

Functional Reading Skills Series

Steck-Vaughn/1984

Reading/Practical & General Rdg.

Tutorial, Drill & Practice

Disk
Manual

ABE

This program is the third in the series, FUNCTIONAL READING SKILLS SERIES, written specifically for ABE students. "Getting the Facts" contains adult-oriented reading passages, levels 2-4, followed by structural skills development exercises.

Getting the Main Idea

Functional Reading Skills Series

Steck-Vaughn/1984

Reading/Practical & General Rdg.

Tutorial, Drill & Practice

Disk
Manual

ABE

This program is the fourth in the series, FUNCTIONAL READING SKILLS SERIES, written specifically for ABE students. "Getting the Main Idea" contains adult-oriented reading selections, levels 2-4, followed by structural skills development exercises.

**Graphing**

Graphing

MECC/1983

Mathematics/Graphs

Drill & Practice

Disk Worksheets
Manual

ABE-GED-HSC

This is a CLIM (Computer Literacy Instructional Model) for computer literacy and mathematics courses. Four activities, QUOTES, GRAPHS, HURKLE and NOMAD give students practice in understanding and reading graphs. Graphics programming is also introduced through the use of ordered pairs.

**Growgins' Fractions**

Growgins' Fractions

MECC/1983

Mathematics/Fractions

Tutorial, Game

Disk Worksheets
Manual Quiz

ABE-GED-HSC

There are two interactive tutorials on like denominators and like numerators. Students learn to order fractions by exploring them as parts of a whole, comparing sizes and numbers of pieces. A game, GROWGINS, provides timed practice in ordering fractions, with the teacher deciding the types of fractions presented.

**Hangman**

Elementary Volume 12-Language Arts

MECC/1980

English/Spelling

Game

Disk
Manual

ABE

This is a game in which the student tries to guess a computer selected word by choosing letters. The words are based on the Systematic Instructional Management Strategies' reading curriculum.

**Health Facts**

Health Maintenance Volume 1 - Facts

MECC/1982

Science/Health

Tutorial

Disk Worksheets
Manual

ABE-GED-HSC-APL

This tutorial presents facts in a variety of health maintenance areas: caloric intake, risk level of heart disease, nutrients basic to life, and toxins.

**Health Hazards**

Health Maintenance Vol.2-Assessment

MECC/1982

Science/Health

Tutorial, Assessment

Disk Worksheets
Manual

GED-HSC-APL

This program shows how lifestyle affects health, by giving a personalized risk assessment. It compares the student's individual data with the corresponding age-group mortality table.

**Heart Lab**

Heart Lab

Education'l Activities/83

Science/Biology

Tutorial, Simulation

Disk
Manual

ABE-GED-HSC

This program teachers the student to identify the heart vessels and chambers. One simulation demonstrates the heart, while another simulation contains a lab exercise on the pulse.

Heartbeat

Estimation

MECC/1984

Mathematics/Whole Numbers

Drill & Practice

Disk
Manual

ABE-GED-HSC

This is an exercise designed to sharpen the student's skills in making estimates. The student is asked to estimate the number of heartbeats in a given period of time.

Heatloss

Heatloss

MECC/1982

Science/Physics

Tutorial, Drill & Practice

Disk Worksheets
Manual

ABE-APL

This is a problem-solving package focusing on energy conservation. Students determine how much energy and money could be saved by making energy-saving improvements in their homes. A printout can be made of the results, identifying problem areas and determining the cost factors.

History Star

I Love America Series/History Star

Island Software/1982

Social Studies/History

Drill & Practice, Game

Disk
Manual

ABE-GED-HSC

Two players answer questions in 10 categories: inventors, women, pioneers, Indians, expansion, presidents, employers, constitution, Black Americans and wars. The first player to reach 500 points is the winner. All answers must be spelled correctly.

**Hot Dog Stand**

Survival Math

Sunburst/1982

Mathematics/Decimals

Simulation, Drill & Practice

Materials

Disk
Manual

ABE-GED-HSC-APL

Description

The student is asked to run a hot dog stand at football games. Supplies must be bought and prices set, based on crowd size and weather. The object is to make as much money as possible for the season. The program deals with unit pricing, profit & loss, price setting and inventory. It can be used as a group project.

**Human Body: An Overview**

Science 1* The Human Body: Overview

BrainBank/1981

Science/Biology

Tutorial

Material

Disk
Manual

ABE-GED-HSC

Description

Topics in this tutorial are covered on both sides of the disk:

Side One: Introduction to the Human Body; Muscular System; Skeletal System; Circulatory System.

Side Two: Digestive System; Respiratory System; Nervous System; Review Test.

**Hurkle**

Guessing and Thinking

MECC/1983

Mathematics/Problem Solving

Game

Material

Disk
Manual

ABE-GED

Description

This program teaches students how to locate coordinates on a number line, through the application of logical thinking skills. The game is also suitable for hearing impaired students.

**Program Name** ICBM

**Title** Science Volume 2 - Biology/Physics

**Publisher/Date** MECC/1980

**Subject** Science/Physics

**Type** Simulation

**Materials**
Disk
Manual

**[illegible]**
GED-HSC

**Description**

This is a simulation of the interception of an ICBM, involving the student in the underlying mathematical calculations.

**Program Name** Ideal Weight

**Title** Health Maintenance Vol.2-Assessment

**Publisher/Date** MECC/1982

**Subject** Science/Health

**Type** Problem Solving

**Materials**
Disk Worksheets
Manual

**[illegible]**
GED-HSC-APL

**Description**

This program uses specific body measurements to calculate an individual's range and percent of body fat.

**Program Name** Integrating Concepts

**Title** Thinking & Learning

**Publisher/Date** EME/1981

**Subject** General/Problem Solving-Logic

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**[illegible]**
GED-HSC

**Description**

This program helps students understand how the mathematical principle of direct and inverse proportions, applies to non-mathematical ideas and concepts.

**Program Name** Interjections

**Title** English: Parts of Speech

**Publisher/Date** MECC/1981

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**[illegible]**
ABE-GED-HSC

**Description**

This program defines and gives examples of interjections. It is an individualized approach, with diagnosis and evaluation through pre and post tests. There is drill and practice available for concepts about which the student is uncertain. Tests can be copied on a printer.

**Program Name** Intro. to Applesoft BASIC

**Title** Introduction to Applesoft BASIC

**Publisher/Date** MECC/1980

**Subject** Microcomputers/Programming

**Type** Tutorial

**Material**
Disk Answer Key
Student Text

**[illegible]**
Computer Literacy

**Description**

This tutorial deals with the following introductory concepts of the programming language, BASIC: 1)System Commands, 2)PRINT and END, 3)variables and assignments, 4)loops and decision, 5)graphs and animation, and 6)DATA and strings. Tutorials accompany the student text.

**Program Name** King's Rule

**Title** The King's Rule: Math & Discovery

**Publisher/Date** Sunburst/1984

**Subject** Mathematics/Problem Solving

**Type** Problem Solving

**Material**
Disk
Manual

**[illegible]**
ABE-GED

**Description**

This is an exercise on recognizing numerical patterns and relationships. There are six levels of difficulty.

**Program Name** Know Your Apple IIe

**Disk** Know Your Apple IIe

**Publisher/Date** MUSE/1982

**Subject** Microcomputers/Anat. & Operation

**Type** Tutorial

**Materials**
Disk

**[illegible]**
Computer Literacy

**Description**

This program is an interactive introduction to the Apple IIe microcomputer, covering the following topics: the monitor, the disk drive, the back of the Apple IIe computer, inside the Apple IIe, and the keyboard.

**Program Name** Lean

**Disk** Nutrition Volume 2

**Publisher/Date** MECC/1982

**Subject** Science/Health

**Type** Tutorial

**Materials**
Disk
Manual

**[illegible]**
GED-HSC-APL

**Description**

This program calculates ideal weight, and establishes food intake guidelines needed to reach a weight goal while maintaining nutritional balance. It explores relationships between food consumption, energy expenditure and resulting body weight.

**Program Name** Length Perception

**Disk** Perception Games

**Publisher/Date** Eduware/1980

**Subject** General/Visual Perception

**Type** Drill & Practice

**Materials**
Disk
Manual

**[illegible]**
ABE-GED-HSC

**Description**

This program challenges the student's ability to compare the length of lines in various relationships to each other.

**Program Name** Limits

**Disk** Social Studies Volume 1

**Publisher/Date** MECC/1981

**Subject** Social Studies/Economics

**Type** Simulation

**Materials**
Disk
Manual

**[illegible]**
GED-HSC

**Description**

This program simulates world resource use, and is based on the book LIMITS TO GROW.

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**Program Name** Locating the Answer

**Disk** Functional Reading Skills Series

**Publisher/Date** Steck-Vaughn/1984

**Subject** Reading/Practical & General Rdg.

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**[illegible]**
ABE

**Description**

This is a part of a series written specifically for Adult Basic Education students - the FUNCTIONAL READING SKILLS SERIES. "Locating the Answer" is the second program in the series. It contains adult-oriented reading selections, levels 2-4, followed by structural skills development exercises.

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**Program Name** Logic Maps

**Disk** Learn About Computers - Logic Maps

**Publisher/Date** Media Materials/1983

**Subject** Microcomputers/Programming

**Type** Tutorial

**Materials**
Disk
Student Booklet

**[illegible]**
Computer Literacy

**Description**

This program contains activities and exercises dealing with the use of flowcharts in programming.

**Master Spell**

Master Spell

MECC/1984

English/Spelling

Drill & Practice, Utility

Disk
Manual

ABE-GED-HSC

This program allows the teacher to design spelling lessons to meet individual needs or to relate to specific curriculum topics. Eighteen word lists of up to 16 words each can be put on each disk. Sentences using the words in context can be included. There is a record kept of misspelled words to generate review lessons.

**MasterType**

MasterType

Lightning Software/1981

Miscellaneous/Typing

Drill & Practice

Disk
Manual

HSC

This typing program provides considerable drill and practice, in the form of a game. Students can learn beginning typing, or use the program to develop increased speed and accuracy, with the computer calculating their progress. Teachers may create their own lessons, or use those provided in the program.

**Math Game**

Elementary Volume 4 - Math/Science

MECC/1980

Mathematics/Whole Numbers

Drill & Practice, Game

Disk Worksheets
Manual

ABE-HSC

This game provides drill in the 4 basic operations.

**Program Name:** Mathware: Fractions

**Disk:** Mathware: Fractions

**Publisher/Date:** Essertier Software/1981

**Subject:** Mathematics/Fractions

**Type:** Tutorial, Drill & Practice

**Materials**

Disk
Manual

**Level**

ABE-GED-HSC

**Description**

The teacher selects the student's program from a choice of 32 concepts (skills) related to fractions. The microcomputer tallies and records all student scores.

**Program Name:** Mathware: Addition,Subtraction

**Disk:** Mathware: Addition & Subtraction

**Publisher/Date:** Essertier Software/1981

**Subject:** Mathematics/Whole Numbers

**Type:** Tutorial, Drill & Practice

**Materials**

Disk
Manual

**Level**

ABE-GED-HSC

**Description**

The teacher selects the student's program from a choice of 35 concepts (skills) related to addition and subtraction of whole numbers. Student scores are recorded by the computer.

**Program Name:** Mathware: Decimals

**Disk:** Mathware: Decimals

**Publisher/Date:** Essertier Software/1981

**Subject:** Mathematics/Decimals

**Type:** Tutorial, Drill & Practice

**Materials**

Disk
Manual

**Level**

ABE-GED-HSC

**Description**

The teacher selects the student's program from a choice of 37 concepts (skills) related to decimals. The microcomputer tallies and records student scores.

**Program Name** Mathware: Multiplic., Division

**Disk** Mathware: Multiplication & Division

**Publisher/Date** Essertier Software/1981

**Subject** Mathematics/Whole Numbers

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**[illegible]**
ABE-GED-HSC

**Description**

The teacher selects the student's program from a choice of 37 skills related to multiplication and division of whole numbers. The student's scores are tabulated and recorded by the computer.

**Program Name** Mathware: Ratios & Percents

**Disk** Mathware/Ratio & Percents

**Publisher/Date** Essertier Software/1980

**Subject** Mathematics/Percents

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**[illegible]**
ABE-GED-HSC

**Description**

The teacher selects the student's program from a choice of 35 concepts (skills) related to ratio and percents. Skills also cover measurement and geometric concepts. Student scores are recorded by the computer.

**Program Name** Mazes of Rodentia

**Disk** Mind Puzzles

**Publisher/Date** MECC/1983

**Subject** General/Problem Solving-Logic

**Type** Game

**Materials**
Disk Worksheets
Manual

**[illegible]**
ABE-GED

**Description**

This program requires a variety of logical thinking skills, as students work their way through a maze tournament. The student controls the level of difficulty, as well as the type of aids they wish to take along.

**Program Name** Memory Myth

**Text** Memory Myth

**Publisher/Date** Micro Power & Light/ '80

**Subject** Reading/Basic Skills

**Type** Game

**Materials**
Disk

**[illegible]**
ABE

**Description**

This game has twelve levels of difficulty, designed to develop memory skills. It tests the student's ability to remember a series of numbers or letters flashed on the screen.

**Program Name** Metric 21

**Text** Elementary Volume 1 - Mathematics

**Publisher/Date** MECC/1980

**Subject** Mathematics/Metrics

**Type** Game

**Materials**
Disk Worksheets
Manual

**[illegible]**
ABE-GED-HSC

**Description**

This is a game of Black Jack, used to improve metric approximation.

**Program Name** Metric Estimate

**Text** Elementary Volume 1 - Mathematics

**Publisher/Date** MECC/1980

**Subject** Mathematics/Measurement

**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**[illegible]**
ABE-GED-HSC-APL

**Description**

This is a timed drill for estimating lengths of line segments, in centimeters and millimeters.

**Program Name** Metric Length

**Disk** Elementary Volume 1 - Mathematics

**Publisher/Date** MECC/1980

**Subject** Mathematics/Metrics

**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**
This is a drill on converting one metric unit to another.

**Program Name** Minerals

**Disk** Science Volume 3 -Earth/Life Science

**Publisher/Date** MECC/1980

**Subject** Science/Earth Science

**Type** Tutorial

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**
This is an identification guide for 29 minerals commonly studied in earth science.

**Program Name** Moptown Hotel

**Disk** Moptown Hotel

**Publisher/Date** Learning Company/1981

**Subject** General/Problem Solving-Logic

**Type** Game

**Materials**
Disk
Manual

**Use**
ABE-GED

**Description**
There are seven games, easy to hard, for use in improving logical thinking and advanced strategy. The program also deals with language concepts.

**Program Name** Mouse in the Maze

**Disk** Mouse in the Maze

**Publisher/Date** MECC/1983

**Subject** Microcomputers/Programming

**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**[illegible]**
Computer Literacy

**Description**

Students write a simple BASIC program to guide a mouse through an unfamiliar maze. The computer displays a maze on the screen, and students guide the mouse through the maze in the shortest possible time.

**Program Name** Multiplication I & II

**Disk** Basic Math Practice

**Publisher/Date** Steck-Vaughn/1984

**Subject** Mathematics/Whole Numbers

**Type** Drill & Practice

**Materials**
2 Disks
Manual

**[illegible]**
ABE

**Description**

This program provides drill & practice in multiplication skills. The large letters and numbers make it suitable for the visually impaired, and color graphics reinforce step-by-step procedures. There are several levels of difficulty, controlled by the teacher, and student scores are tallied.

**Program Name** Multiplication Puzzles

**Disk** Teasers by Tobbs

**Publisher/Date** Sunburst/1982

**Subject** Mathematics/Problem Solving

**Type** Game, Drill & Practice

**Materials**
Disk
Manual

**[illegible]**
ABE-HSC

**Description**

This program uses a game format to provide practice in logical thinking. Students are asked to use logic in solving multiplication and division problems of one and two digit numbers.

**Program Name** Nomad

**Disk** Elementary Volume 6 - Social Studies

**Publisher/Date** MECC/1980

**Subject** Social Studies/Geography

**Type** Simulation

**Materials**
Disk
Manual

**[illegible]**
ABE-HSC

**Description**

This simulation develops map reading skills, using a game format.

**Program Name** Nouns

**Disk** English: Parts of Speech

**Publisher/Date** MECC/1981

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**[illegible]**
ABE-GED-HSC

**Description**

This is a program containing a definition and examples of nouns. There is a diagnostic quiz and review. Copies of pre and post tests can be made on a printer. The program is an individualized presentation, based on student diagnosis.

**Program Name** Number

**Disk** Guessing and Thinking

**Publisher/Date** MECC/1980

**Subject** Mathematics/Problem Solving

**Type** Game

**Materials**
Disk
Manual

**[illegible]**
ABE-GED

**Description**

This is a game of logic. Using various ranges of numbers, the computer picks a number for the student to guess. The computer gives clues of "too high" or "too low," until the right number is guessed. This program is also suitable for the hearing impaired. It can also be found on MECC'S ELEMENTARY VOLUME 1.

**Program Name** Number Line

**Disk** Estimation

**Publisher/Date** MECC/1984

**Subject** Mathematics/Whole Numbers

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This program works on the students estimation skills. It gives practice in estimating the location of whole numbers and decimals on a number line.

**Program Name** Nutrients

**Disk** Elementary Volume 13 - Nutrition

**Publisher/Date** MECC/1980

**Subject** Science/Health

**Type** Problem Solving

**Materials**
Disk
Manual

**Use**
ABE-HSC

**Description**

This program analyzes a one-day diet entered by the student.

**Program Name** Oh, Deer!

**Disk** Oh, Deer!

**Publisher/Date** MECC/1983

**Subject** General/Problem Solving-Logic

**Type** Simulation

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC-APL

**Description**

Students must use their problem solving skills to address an ecological problem. They act as members of a committee to determine the best way to control a deer herd that is overflowing into a residential community. Students must explore variables, make computer-based projections and, ultimately, decisions.

Program Name: **Oregon**

Disk: Elementary Volume 6 - Social Studies
Publisher/Date: MECC/1980
Subject: Social Studies/History
Type: Simulation

Materials:
Disk
Manual

Use:
ABE-HSC

Description:
This is a simulation of a trip by covered wagon in 1847, from Independence, Missouri to Oregon City.

Program Name: **Parallelogram Area**

Disk: Mathematics Volume 3 - Geometry
Publisher/Date: MECC/1980
Subject: Mathematics/Geometry
Type: Tutorial, Drill & Practice

Materials:
Disk
Manual

Use:
ABE-GED-HSC

Description:
A tutorial on calculating the area of parallelograms is included in this program. There is also an optional drill and practice on the skill.

Program Name: **Percents**

Disk: Automotive Technician Mathematics 2
Publisher/Date: MECC/1983
Subject: Mathematics/Consumer Math
Type: Tutorial, Drill & Practice

Materials:
Disk
Manual

Use:
ABE-GED-HSC-APL

Description:
This program includes a tutorial, randomly-generated practice problems and tests on using percents in automotive mechanics problems. A teacher option allows the selection of either English or metric units of measure. The tests can be printed out.

**Program Name:** Perimeters

**Disk:** Mathematics Volume 3 - Geometry

**Publisher/Date:** MECC/1980

**Subject:** Mathematics/Geometry

**Type:** Tutorial, Drill & Practice

**Materials:**
Disk Worksheets
Manual

**[illegible]:** ABE-GED-HSC

**Description:**
This program defines perimeter and gives instruction in calculating perimeters. The program contains an optional drill and practice.

**Program Name:** Pest

**Disk:** Science Volume 2 - Biology/Physics

**Publisher/Date:** MECC/1980

**Subject:** Science/Biology

**Type:** Simulation

**Materials:**
Disk
Manual

**[illegible]:** GED-HSC

**Description:**
This is a simulation of interactions which occur between pesticides and environments.

**Program Name:** PFS: FILE

**Disk:** PFS: FILE

**Publisher/Date:** Software Pub. Co./1982

**Subject:** Microcomputers/Application Prog.

**Type:** Application

**Materials:**
Disk
Manual

**[illegible]:** Computer Literacy

**Description:**
This is a simple database system for storing and retrieving information. The user designs a form for gathering information, and then retrieves the information when needed, either on-screen or in a printed report. This program, used in conjunction with PFS: REPORT, is good for statistical and impact report generation.

Program Name: PFS: REPORT

Disk: PFS: REPORT

Publisher/Date: Software Pub. Co./1982

Subject: Microcomputers/Application Prog.

Type: Application

Materials:
2 Disks
Manual

Use: Computer Literacy

Description:

This is a report-generating program, to be used in conjunction with PFS: FILE. Data gathered and stored in files created by PFS: FILE, can be printed in various report forms, to meet specific program reporting needs. The program sorts, alphabetizes, calculates column totals & averages, and generates printed reports.

Program Name: Phonet

Disk: Elementary Volume 11-Language Arts

Publisher/Date: MECC/1980

Subject: English/Vocabulary

Type: Drill & Practice

Materials:
Disk
Manual

Use: ABE

Description:

This program has the student work through phonetic exercises in sound associations, affixes, syllables, contractions and homonyms.

Program Name: PIXIT/Shape Library #1

Disk: PIXIT

Publisher/Date: Baudville/1983

Subject: Microcomputers/Utility

Type: Utility

Materials:
2 Disks
Manual

Use: Staff

Description:

This is a graphics development tool. The first disk has a picture editor for creating graphic displays, a library of letter fonts, and a shape library of pre-drawn pictures. The second disk is a shape library, containing pictures which can be printed out and used by teachers in brochures, student worksheets, handouts and so on.

**Program Name** Policy

**Title** Social Studies Volume 1

**Publisher/Date** MECC/1981

**Subject** Social Studies/Political Science

**Type** Simulation

**Material**
Disk
Manual

**Level**
GED-HSC

**Description**

This is a simulation of the impact special interest groups have on policy formation.

**Program Name** Polls and Politics

**Title** Polls and Politics

**Publisher/Date** MECC/1984

**Subject** Social Studies/Political Science

**Type** Tutorial, Simulation

**Material**
Disk Handouts
Manual

**Level**
ABE-GED-HSC

**Description**

This program deals with political polls and how to judge them. It also discusses the vital role that computers play in polling techniques. Students have the opportunity to use the computer to analyze survey data they themselves have created.

**Program Name** Pooling Around

**Title** Problem Solving Strategies

**Publisher/Date** MECC/1983

**Subject** Mathematics/Problem Solving

**Type** Simulation

**Material**
Disk Worksheets
Manual

**Level**
ABE-GED-HSC

**Description**

This exercise helps students learn to predict outcomes based on discovered patterns. The computer simulates the path of a ball on pool tables of varying dimensions. Students collect data, discover patterns, then predict results. A color monitor is recommended but not required.

**Program Name** Population

**Disk** Computers in Government

**Publisher/Date** MECC/1984

**Subject** Social Studies/Political Science

**Type** Simulation

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This program simulates the population changes of a country when fertility rate, birth distribution or mortality rate are changed. The student analyses how these changes affect the entire population or a segment of it, and use the data to make policy recommendations as they participate in a cabinet meeting.

**Program Name** Pre-Reading/Counting

**Disk** Elementary Volume 7

**Publisher/Date** MECC/1981

**Subject** Reading/Basic Skills

**Type** Drill & Practice, Game

**Materials**
Disk
Manual

**Use**
ABE

**Description**

There are nine activities in this program, dealing with the following concepts: "Caterpillar" and "Train" --> letter recognition; "A Is For Apple" --> initial consonant identification; "Pictures," "Words" and "Shapes" --> memory and concentration; "Smile," "Wuzzle" and "Spaceship" --> counting and addition.

**Program Name** Prefixes

**Disk** Elementary Volume 5 - Language Arts

**Publisher/Date** MECC/1980

**Subject** English/Vocabulary

**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-HSC

**Description**

Five lessons present the prefixes "un," "re," "dis," "pre" and "in." There are two review lessons, containing graphics and stories.

**Program Name** Prepositions

**Unit** English: Parts of Speech

**Publisher/Date** MECC/1981

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Material**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program uses definitions and examples of prepositions showing relationship or direction to some other part of the sentence. It contains a review and diagnostic quiz.

**Program Name** Primes

**Unit** Prime Numbers

**Publisher/Date** MECC/1984

**Subject** Mathematics/Whole Numbers

**Type** Simulation

**Material**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC-APL

**Description**

The computer generates prime numbers, while students formulate hypotheses and try them on the computer. The program also calls for pattern searching and problem solving. At the end of the program, the students work on factoring skills while playing "Factor Quiz."

**Program Name** Processing Words

**Unit** Processing Words - (CLIM)

**Publisher/Date** MECC/1983

**Subject** Microcomputers/Application Prog.

**Type** Tutorial

**Material**
Disk
Manual

**Use**
Computer Literacy

**Description**

This program presents elementary concepts of word processing on a microcomputer.

**Program Name** Pronouns

**Disk** English: Parts of Speech

**Publisher/Date** MECC/1981

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program uses definitions and examples to teach pronouns as words used in the place of a noun or another pronoun. It contains a review and a diagnostic quiz.

**Program Name** Puzzles and Posters

**Disk** Puzzles and Posters

**Publisher/Date** MECC/1984

**Subject** Microcomputers/Utility

**Type** Utility

**Materials**
Disk
Manual

**Use**
Staff

**Description**

Teachers can use this utility to create puzzles and posters. A printer is needed for these activities: WORDSEARCH creates and prints word search puzzles; CROSSWORD PUZZLE creates and prints crossword puzzles; A-MAZE-MENT prints mazes; POSTERS & BANNERS is used to design and print original posters and banners.

**Program Name** Quakes

**Disk** Science Volume 3 -Earth/Life Science

**Publisher/Date** MECC/1980

**Subject** Science/Earth Science

**Type** Simulation

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

This is a simulation on locating the epicenter of an earthquake.

**Program Name** Queen Bee of Menta

**Disk** Mind Puzzles

**Publisher/Date** MECC/1983

**Subject** General/Problem Solving-Logic

**Type** Game

**Materials**
Disk Manual
Worksheets

**Use**
ABE-GED

**Description**

This program presents a matrix problem which must be analyzed. From there, strategies must be determined and the problem solved.

**Program Name** Quick File

**Disk** Quick File

**Publisher/Date** Apple Computer/1982

**Subject** Microcomputers/Application Prog.

**Type** Application

**Materials**
Program Disk
Manual

**Use**
Computer Literacy

**Description**

This is a simple, easy-to-use database program. It can be used to generate and print reports in two different formats.

**Program Name** Reading Comprehension

**Disk** Reading Comprehens./Main Idea-Detail

**Publisher/Date** Milton Bradley/1983

**Subject** Reading/Practical & General Rdg.

**Type** Tutorial, Drill & Practice, Game

**Materials**
Disk Worksheets
Manual Records

**Use**
ABE-GED

**Description**

The programs in this set should be done in order, using the student record manager. Programs include: "Recognizing Topic Sentences," "Listing Supporting Details," "Summarizing Main Ideas," "Choosing Titles" and "Evaluating Details." There is a final review of the five comprehension skills, in the form of a game - ALIEN RAIDERS.

**Program Name** Rectangle and Square Areas

**Disk** Mathematics Volume 3 - Geometry
**Publisher/Date** MECC/1980
**Subject** Mathematics/Geometry
**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

This program defines the concept of area, and gives instruction in calculating the area of rectangles and squares. The program contains an optional drill & practice.

**Program Name** Rocky's Boots

**Disk** Rocky's Boots
**Publisher/Date** Learning Company/1982
**Subject** Microcomputers/Anat. & Operation
**Type** Game

**Materials**
Disk
Manual

**Use**
Computer Literacy

**Description**

This games builds logical thinking skills. While building and using circuitry machines on the screen, players learn the basics of computer circuitry.

**Program Name** Round

**Disk** Elementary Volume 1 - Mathematics
**Publisher/Date** MECC/1980
**Subject** Mathematics/Whole Numbers
**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This is a drill on rounding numbers to the nearst ten, hundred or thousand.

**Program Name** Salt and You

**Disk** Salt and You

**Publisher/Date** MECC/1984

**Subject** Science/Health

**Type** Tutorial

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This program helps students become aware of the hazards of using too much salt. They can analyze their own diets to determine if they are using salt at a safe level. The program discusses how to maintain diets that incorporate healthy levels of salt usage.

**Program Name** Scramble

**Disk** Elementary Volume 12-Language Arts

**Publisher/Date** MECC/1980

**Subject** English/Spelling

**Type** Game

**Materials**
Disk
Manual

**Use**
ABE

**Description**

In this game, the computer scrambles the letters of a word from a SIMS (Systematic Instructional Management Strategies) category. The student tries to give the correct spelling in a specified length of time.

**Program Name** Sell

**Disk** Elementary Volume 3 - Social Studies

**Publisher/Date** MECC/1980

**Subject** Social Studies/Economics

**Type** Simulation, Game

**Materials**
Disk Worksheets
Manual

**Use**
ABE-HSC-APL

**Description**

This program actually contains four simulations: SELL APPLES is a lesson on pricing; SELL BICYCLES is a simulation in economics, with two students managing different bicycle shops; SELL LEMONADE simulates the economics involved in operating a lemonade stand; SELL PLANTS deals with advertising.

| | |
|---|---|
| **Program Name** | Shape Recognition |
| **Disk** | Perception Games |
| **Publisher/Date** | Eduware/1980 |
| **Subject** | General/Visual Perception |
| **Type** | Drill & Practice |
| **Materials** | Disk<br>Manual |
| **Use** | ABE-GED-HSC |

**Description**

This program tests the student's ability to discriminate between shapes, to remember the exact shape of a geometric figure, and to compare it to others.

| | |
|---|---|
| **Program Name** | Shopping |
| **Disk** | Estimation |
| **Publisher/Date** | MECC/1984 |
| **Subject** | Mathematics/Whole Numbers |
| **Type** | Drill & Practice |
| **Materials** | Disk<br>Manual |
| **Use** | ABE-GED-HSC-APL |

**Description**

This program asks the student to use estimation skills in practical situations. The student gets practice in estimating the amount of money spent on various shopping trips.

| | |
|---|---|
| **Program Name** | Simple Machines |
| **Disk** | Simple Machines |
| **Publisher/Date** | Micro Power & Light/ '80 |
| **Subject** | Science/Physics |
| **Type** | Tutorial |
| **Materials** | Disk |
| **Use** | ABE-GED-HSC |

**Description**

This program teaches the principles and operation of six simple machines: lever, pulley, wheel and axle, inclined plane, wedge and screw.

**Program Name** Simulated Computer

**Disk** Simulated Computer

**Publisher/Date** Edusoft/1982

**Subject** Microcomputers/Anat. & Operation

**Type** Tutorial, Simulation

**Materials**
Disk
Manual

**Use**
Computer Literacy

**Description**

This interactive tutorial demonstrates the basic principles of the operation of a computer. The simulation shows the internal workings of the machine, while an actual program is being processed.

**Program Name** Size Comparison

**Disk** Perception Games

**Publisher/Date** Eduware/1980

**Subject** General/Visual Perception

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

Students are asked to make visual judgments in comparing geometric figures. The figures are identical in shape, but vary in size.

**Program Name** Skeletal System

**Disk** The Skeletal System

**Publisher/Date** BrainBank/1981

**Subject** Science/Biology

**Type** Tutorial

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program teaches the following: the names of major bones; how joints work; the job of ligaments and cartilage; functions of the skeletal system. There is a review test at the end.

**Program Name** Slope

**Disk** Mathematics Volume 1

**Publisher/Date** MECC/1980

**Subject** Mathematics/Algebra

**Type** Tutorial

**Materials**
Disk Worksheets
Manual

**Use**
GED-HSC

**Description**

This program illustrates the graphing of up to 5 linear equations on a single axis. It uses coordinate geometry, with input received in the form of algebraic equations.

**Program Name** Smart Shopper Marathon

**Disk** Survival Math

**Publisher/Date** Sunburst/1982

**Subject** Mathematics/Decimals

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This program also deals with percents and measurement. The student goes on a simulated shopping trip and calculates the best buys in each of 5 aisles. Students must address the concept of unit pricing discounts.

**Program Name** Smoking: It's Up To You

**Disk** Smoking: It's Up To You

**Publisher/Date** MECC/1984

**Subject** Science/Health

**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-HSC-APL

**Description**

This package examines several topics related to smoking: health risks, cost considerations, immediate effects and personal attitudes.

**Program Name** Snark

**Disk** Mathematics Volume 1

**Publisher/Date** MECC/1980

**Subject** Mathematics/Graphs

**Type** Game

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

Students learn co-ordinate geometry by trying to find a "snark," hiding on a 10"x10" grid. Students must encircle the snark on the grid.

**Program Name** Socratic Dialogue

**Disk** Thinking & Learning

**Publisher/Date** EME/1981

**Subject** General/Problem Solving-Logic

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

Students experience how the truth can be systematically uncovered, through logical dialogue.

**Program Name** Solar Distance

**Disk** Elementary Volume 4 - Math/Science

**Publisher/Date** MECC/1980

**Subject** Science/Earth Science

**Type** Tutorial, Simulation

**Materials**
Disk Worksheets
Manual

**Use**
ABE-HSC

**Description**

This program teaches concepts of distance in astronomy, by having students travel to different planets in various vehicles.

**Program Name** Solving Equations

**Disk** Solving Equations & Inequalities: Algb.

**Publisher/Date** Sunburst/1983

**Subject** Mathematics/Algebra

**Type** Tutorial, Drill & Practice

**Materials**

Disk
Manual

**Use**

GED-HSC

**Description**

This tutorial teaches and gives practice in solving equations, using a balance scale.

**Program Name** Solving Inequalities

**Disk** Solving Equations & Inequalities: Algb.

**Publisher/Date** Sunburst/1983

**Subject** Mathematics/Algebra

**Type** Tutorial, Drill & Practice

**Materials**

Disk
Manual

**Use**

GED-HSC

**Description**

This program teaches and provides practice in solving inequalities, using a balance scale.

**Program Name** Speed Drill

**Disk** Elementary Volume 1 – Mathematics

**Publisher/Date** MECC/1980

**Subject** Mathematics/Whole Numbers

**Type** Drill & Practice

**Materials**

Disk
Manual

**Use**

ABE-GED-HSC

**Description**

This is a timed drill on addition, subtraction, multiplication and division. The student chooses the level of difficulty.

**Program Name** Spell 1

**Disk** Elementary Volume 12-Language Arts

**Publisher/Date** MECC/1980

**Subject** English/Spelling

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE

**Description**

This is a spelling memory drill.

**Program Name** Spelling (Primary)

**Disk** Spelling Volume 1 - Primary

**Publisher/Date** MECC/1980

**Subject** English/Spelling

**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE

**Description**

This program consists of 20 twenty-word spelling drills. In each drill, sentences with three possible answers are presented to the student. The teacher can change the sentences and the options.

**Program Name** Spelling (Secondary)

**Disk** Spelling Volume 2 - Secondary

**Publisher/Date** MECC/1980

**Subject** English/Spelling

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
GED

**Description**

This program consists of 30 twenty-word spelling drills. A sentence with three possible spelling choices for a highlighted word is presented to the student. The teacher can change the sentences and/or the choices.

**Program Name** Squares

**Disk** Problem Solving Strategies

**Publisher/Date** MECC/1983

**Subject** Mathematics/Problem Solving

**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

This interactive tutorial gives practice using three problem solving strategies: trial and error, exhaustive listing and simplifying the problem.

**Program Name** Star Trace

**Disk** Perception Games

**Publisher/Date** Eduware/1980

**Subject** General/Visual Perception

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

Game paddles are needed to use this visual perception program. Using the paddles, the student controls movement of a dot along a path, within two similar figures on the screen.

**Program Name** States

**Disk** Elementary Volume 3 - Social Studies

**Publisher/Date** MECC/1980

**Subject** Social Studies/Geography

**Type** Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-HSC-APL

**Description**

This program involves the recall of state names and capitals, and the ability to recognize a state by its shape.

**Program Name** States 2

**Disk** Social Studies Volume 2-Simulations

**Publisher/Date** MECC/1980

**Subject** Social Studies/Geography

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use** ABE-GED-HSC

**Description**

Students are drilled on the names of states, base on a computer display of the shape of the state within a geographic section of the country. The correct spelling of the state's name is required.

**Program Name** Strategies for Test Taking

**Disk** Strategies for Test Taking

**Publisher/Date** MCE/1982

**Subject** Miscellaneous/Assessment

**Type** Tutorial

**Materials**
Disk
Worksheets

**Use** ABE-GED-HSC

**Description**

This program teaches students basic strategies for taking tests. Types of tests discussed include true/false, fill in the blanks, short answer, and essay tests. There is a teacher option to change the reading level and speed of the program to meet individual or group student needs.

**Program Name** Study Guide

**Disk** Study Guide

**Publisher/Date** MECC/1984

**Subject** Microcomputers/Utility

**Type** Utility

**Materials**
Disk
Manual

**Use** Staff

**Description**

This utility contains the following options: DESIGNER is used to write multiple choice, true/false, matching and completion questions; REVIEWER provides interactive drill & practice on the questions created with DESIGNER; EXAMINER prints the sets of questions as worksheets or tests for use with students.

**Program Name** Subtraction I & II

**Disk** Basic Math Practice

**Publisher/Date** Steck-Vaughn/1984

**Subject** Mathematics/Whole Numbers

**Type** Drill & Practice

**Materials**
2 Disks
Manual

**Use** ABE

**Description**

This program provides drill & practice on subtraction skills. The large letters and numbers make it suitable for the visually impaired, and color graphics reinforce step-by-step procedures. The subtraction exercises are presented at several levels of difficulty, controlled by the teacher. Student scores are tallied.

**Program Name** Subtraction of Measurements

**Disk** Mathematics Volume 2 - Measurement

**Publisher/Date** MECC/1981

**Subject** Mathematics/Measurement

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use** ABE-GED-HSC-APL

**Description**

This tutorial is followed by practice in adding English mixed measurements.

**Program Name** Sumer

**Disk** Elementary Volume 6 - Social Studies

**Publisher/Date** MECC/1980

**Subject** Social Studies/Economics

**Type** Simulation

**Materials**
Disk
Manual

**Use** ABE-HSC

**Description**

This simulation uses role-playing and economics, as the student becomes the ruler of an ancient kingdom.

**Program Name** Tag

**Disk** Science Volume 1 - Biology/Physics

**Publisher/Date** MECC/1980

**Subject** Science/Biology

**Type** Simulation

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

This biology program simulates a fish-tagging procedure in a lake.

**Program Name** Tens

**Disk** Elementary Volume 1 - Mathematics

**Publisher/Date** MECC/1980

**Subject** Mathematics/Whole Numbers

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This is a drill on multiplying numbers that are multiples of ten.

**Program Name** Thinking With Ink

**Disk** Problem Solving Strategies

**Publisher/Date** MECC/1983

**Subject** Mathematics/Problem Solving

**Type** Game

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

A color monitor is required to use this program. The student must apply problem solving strategies to a comples problem - using deductive thinking.

**Program Name** Three R's of Microcomputing

**Disk** The Glass Computer

**Publisher/Date** MECC/1983

**Subject** Microcomputers/Anat. & Operation

**Type** Tutorial, Simulation

**Materials**
Disk
Manual

**Use**
Computer Literacy

**Description**

This tutorial covers the functions (input, output, data processing) of a microcomputer. The glass computer graphically displays the inner workings of the microcomputer, while a program is being processed.

**Program Name** Tilt Maze

**Disk** Perception Games

**Publisher/Date** Eduware/1980

**Subject** General/Visual Perception

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

Game paddles are needed for this program. The visual perception drill replicates a popular game. The student must manipulate a ball through a maze on a tilting platform. Using the game paddles, the student controls the movement of the ball and the tilt of the platform.

**Program Name** Tobbs Gets Tough

**Disk** Tobbs Learns Algebra

**Publisher/Date** Sunburst/1983

**Subject** Mathematics/Algebra

**Type** Problem Solving

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

This exercise is a series of addition and multiplication grids, with the numbers inside the grid being systematically altered. Using logical thinking, students are required to complete each grid as its number relationships change. There are two levels of difficulty.

**Program Name** Trapezoid and Triangle Areas

**Disk** Mathematics Volume 3 - Geometry

**Publisher/Date** MECC/1980

**Subject** Mathematics/Geometry

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program contains a tutorial on calculating of the area of trapezoids and triangles. The program has an optional drill and practice segment.

**Program Name** Travel Agent Contest

**Disk** Survival Math

**Publisher/Date** Sunburst/1982

**Subject** Mathematics/Decimals

**Type** Drill & Practice, Simulation

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC-APL

**Description**

The student plans a 7 day trip, with expenses not to exceed a given limit. This program deals with budgeting skills, use of decimals, estimation, and money.

**Program Name** U.S. Constitution Tutor - 1

**Disk** U.S. Constitution Tutor

**Publisher/Date** Microlearn/1984

**Subject** Social Studies/Political Science

**Type** Tutorial, Drill & Practice

**Materials**
Disk (Side One)
Manual

**Use**
ABE-GED-HSC-APL

**Description**

This program contains questions on aspects of U.S. Government: the Legislative Branch; how a Bill becomes law; the Executive Branch; Elections. The Tutorial Mode contains explanations for answers. The Test Mode gives the student's score and suggested tutorials. Levels of difficulty: Beginner, Intermediate, Advanced.

**Program Name** U.S. Constitution Tutor - 2

**Disk** U.S. Constitution

**Publisher/Date** Microlearn/1983

**Subject** Social Studies/Political Science

**Type** Tutorial, Drill & Practice

**Materials**
Disk (Side Two)
Manual

**Use**
ABE-GED-HSC-APL

**Description**

The questions in this program cover: U.S. Constitution principles; history and background of the Constitution. The Tutorial Mode gives information on correct/incorrect answers. The Test Mode gives the student's score and lists suggested remedial tutorials. Levels of difficulty include Beginner, Intermediate & Advanced.

**Program Name** URSA

**Disk** Science Volume 3-Earth/Life Science

**Publisher/Date** MECC/1980

**Subject** Science/Earth Science

**Type** Tutorial, Simulation

**Materials**
Disk Worksheets
Manual

**Use**
ABE-HSC

**Description**

This is a tutorial on constellations, including a section on telling time by the stars.

**Program Name** Using the Content

**Disk** Functional Reading Skills Series

**Publisher/Date** Steck-Vaughn/1984

**Subject** Reading/Practical & General Rdg.

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE

**Description**

This program is the sixth in the series, FUNCTIONAL READING SKILLS SERIES, written specifically for ABE students. "Using the Content" contains adult-oriented reading selections, levels 2-4, followed by structural skills development exercises.

**Program Name** USPOP

**Disk** Social Studies Volume 1

**Publisher/Date** MECC/1981

**Subject** Social Studies/Political Science

**Type** Simulation

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

This program projects US population based on user-determined parameters.

**Program Name** Verbs

**Disk** English: Parts of Speech

**Publisher/Date** MECC/1981

**Subject** English/Grammar and Usage

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use**
ABE-GED-HSC

**Description**

This program defines and gives examples of verbs. It contains a diagnostic quiz to identify student weaknesses, and then provides remediation in those areas. There is a review of concepts covered. Pre and post tests can be copied on a printer.

**Program Name** Visicalc

**Disk** Visicalc

**Publisher/Date** Visicorp

**Subject** Microcomputers/Application Prog.

**Type** Application

**Materials**
Program Disk
Manual Templates

**Use**
Computer Literacy

**Description**

This is a powerful electronic spreadsheet, for use in computer literacy courses as well as program management. Spreadsheets such as VISICALC can be used for numerous financial applications, as well as program planning and statistical projections, student grading, attendance recording and many other applications.

**Program Name** Visual Pursuit

**Disk** Perception Games

**Publisher/Date** Eduware/1980

**Subject** General/Visual Perception

**Type** Drill & Practice

**Materials**
Disk
Manual

**Use** ABE-GED-HSC

**Description**

Game paddles are needed to use this program. Students use the paddles to control the movement of crossed lines. The goal is to get the crossed lines to intersect with a small box - before the box moves.

**Program Name** VOCAB

**Disk** Teacher Utilities: Volumes 2 &4

**Publisher/Date** MECC/1981

**Subject** English/Vocabulary

**Type** Utility, Drill & Practice

**Materials**
2 Disks
Manual

**Use** Staff-ABE-GED

**Description**

This teacher utility creates customized vocabulary programs that can be used by students. The teacher may create and edit lists of vocabulary words. These lists are incorporated into four activities for use by students: Hangman, unscrambling words, spelling memorization, and spelling recognition.

**Program Name** Whole Numbers

**Disk** Automotive Technician Mathematics 1

**Publisher/Date** MECC/1983

**Subject** Mathematics/Consumer Math

**Type** Tutorial, Drill & Practice

**Materials**
Disk
Manual

**Use** ABE-GED-HSC-APL

**Description**

This program consists of a tutorial, plus randomly-generated practice problems and tests dealing with the use of whole numbers in automotive mechanics problems. A teacher option allows for the selection of either English or metric units of measure. Copies of student tests can be made on the printer.

**Program Name** Witch Word

**Disk** Word Wizards

**Publisher/Date** MECC/1984

**Subject** English/Spelling

**Type** Game

**Materials**
Disk
Manual

**Use**
ABE

**Description**

This game consists of computer-scrambled letters, which the student must rearrange to form a word or words.

**Program Name** Wizard Magic

**Disk** Word Wizards

**Publisher/Date** MECC/1984

**Subject** English/Vocabulary

**Type** Game

**Materials**
Disk
Manual

**Use**
ABE

**Description**

This is a word-guessing game, based on a list of teacher-determined words. Students are given clues by the computer, and must fill in blanks to guess the words on the list.

**Program Name** Wizard Memory

**Disk** Word Wizards

**Publisher/Date** MECC/1984

**Subject** English/Vocabulary

**Type** Game

**Materials**
Disk
Manual

**Use**
English/Vocabulary

**Description**

Both visual pattern discrimination and problem solving skills are called into play, as students play a form of CONCENTRATION. They are asked to recall the location of sets of homonyms, antonyms, synonyms, or other groups of words of the teacher's choice.

**Program Name** Word Attack!

**Disk** Word Attack!

**Publisher/Date** Davidson & Assoc./1983

**Subject** English/Vocabulary

**Type** Tutorial, Drill & Practice

**Materials**
1 Program Disk
5 Data Disks, Guide

**Use** ABE-GED-HSC

**Description**

This is a four part vocabulary-building program, consisting of: 1)words and meanings, 2)multiple choice quiz, 3)sentence completion, 4)word attack games. There are data disks for grades 4&5, 6&7, 8&9, levels 1-9, and SAT. Through the use on an editing function, the teacher can create new lists.

**Program Name** Word Herd: Look Alikes

**Disk** Word Herd: Look Alikes

**Publisher/Date** MECC/1984

**Subject** English/Vocabulary

**Type** Tutorial

**Materials**
Disk Worksheets
Manual

**Use** ABE-GED-HSC

**Description**

This three-step tutorial teaches students to distinguish between word look-alikes (desert, dessert). Students match look-alike words with their definitions, use them in context, and observe meaning changes as the words are changed by adding prefixes or suffixes. There are listings in the manual for pre and post tests.

**Program Name** Word Herd: Sound Alikes

**Disk** Word Herd: Sound Alikes

**Publisher/Date** MECC/1984

**Subject** English/Vocabulary

**Type** Tutorial

**Materials**
Disk Worksheets
Manual

**Use** ABE-GED-HSC

**Description**

This program consists of 12 sets of homophones. Students work on definitions of these sound-alikes, as well as their correct spelling, their use in context, and changes in meaning with the addition of prefixes and suffixes. The manual contains full listings of words and sentences for pre and post testing.

**Program Name** Worder

**Disk** Elementary Volume 12-Language Arts

**Publisher/Date** MECC/1980

**Subject** English/Vocabulary

**Type** Drill & Practice, Game, Utility

**Materials**
Disk
Manual

**Use**
ABE-GED

**Description**

In this program, the computer constructs and generates a printed word puzzle from words in a SIMS (Systematic Instructional Management System) category. The student attempts to find the hidden words in the word-search puzzle.

**Program Name** Writing a Character Sketch

**Disk** Writing a Character Sketch

**Publisher/Date** MECC/1983

**Subject** English/Composition

**Type** Tutorial

**Materials**
Disk
Manual

**Use**
GED-HSC

**Description**

This is an interactive creative writing program. Students are guided, by a series of structured questions, into developing a rough profile of a fictional or historical person, or someone they know. A printout can be run at the end of the computer session, to help them write a rough draft of a character sketch.

**Program Name** Writing a Narrative

**Disk** Writing a Narrative

**Publisher/Date** MECC/1983

**Subject** English/Composition

**Type** Tutorial, Drill & Practice

**Materials**
Disk Worksheets
Manual

**Use**
ABE-GED-HSC

**Description**

This is a creative writing program, consisting of three topics: IDEA STORMING, ONE-TWO-THREE helps students create a framework for a narrative; CATCH THE MOMENTS traces the development of an event; POINT OF VIEW deals with the shift of effect arising from writing from different points of view.

# Appendix C

# List of Publishers

**American Software Publishing**
P. O. Box 57221
Washington, D.C. 20037
202-887-5834

**Apple Computer, Inc.**
20525 Mariani Avenue
Cupertino, California 94014
408-996-1010

**Baudville**
1001 Medical Park Drive, S.E.
Grand Rapids, Michigan 49506
616-957-3036

**BrainBank, Inc.**
220 Fifth Avenue
New York, New York 10001
212-686-6565

**Broderbund Software**
1938 Fourth Street
San Rafael, California 94901
415-479-1170

**Cincinnati Public Schools**
Vocational/Continuing Education
230 East Ninth Street
Cincinnati, Ohio 45203
513-369-4017

**Davidson & Associates**
6069 Grovedac Place, #12
Rancho Palos Verdes, CA 90274
213-373-9473

**Educational Activities, Inc.**
P.O. Box 392
Freeport, New York 11520
516-223-4666

**Edusoft**
P.O. Box 2560
Berkeley, California 94702
415-548-2304

**Eduware, Inc.**
28035 Dorothy Drive
Agoura, California 91301
213-706-0661

**E.M.E.**
P.O. Box 17
Pelham, New York 10803
914-576-1121

**Essertier Software Corp.**
1020 Manhattan Beach Blvd.
Manhattan Beach, CA 90266
213-546-5895

**Hartley Courseware, Inc.**
123 Bridge Street
Dimondale, MI 48821
517-646-6458

**Innovative Programming Assoc.**
1 Airport Place
Princeton, New Jersey 08540
609-924-7272

**Island Software**
Dept. H
P. O. Box 300
Lake Grove, New York 11755
516-585-3755

**The Learning Company**
Suite 170
545 Middlefield Road
Menlo Park, CA 94025
415-328-5410

**Lightning Software, Inc.**
480 California Avenue
Palo Alto, California 94306
415-327-3280

**MCE, Inc.**
Suite 250
157 S. Kalamazoo Mall
Kalamazoo, MI 49007
616-345-8681

**McGraw-Hill**
Floor 28
1221 Avenue of the Americas
New York, New York 10020
212-512-2000

**MECC**
3490 Lexington Avenue North
Saint Paul, Minnesota 55112
612-481-3500

**Media Materials, Inc.**
2936 Remington Avenue
Baltimore, Maryland 21211
301-235-1700

**Micro Power & Light Co.**
12820 Hillcrest Road, #219
Dallas, Texas 75230
214-239-6620

**Microcomputer Workshops**
225 Westchester Avenue
Port Chester, New York 10573
914-937-5440

**Microlearn**
MicroLab, Inc
2699 Skokie Valley Road
Highland Park, Illinois 60035
312-433-7550

**Milton Bradley Co.**
Educational Division
Springfield, MA 01101
413-525-6411

**MUSE Software**
347 N. Charles Street
Baltimore, Maryland 21201
301-659-7212

**Software Publishing Corp.**
1901 Landings Drive
Mountain View, CA 94043
415-962-8910

**Steck-Vaughn**
P. O. Box 2028
Austin, Texas 78768

**Sunburst Communications**
39 Washington Avenue
Pleasantville, NY 10570
914-769-5030
800-431-1934

**Visicorp**
2895 Zanker Road
San Jose, California 95134
408-946-9000